



## **Conditions of Dentistry in New South Wales.**

By DR. H. BRUTON SWEET, Orange, N. S. W.

There exists in the profession in New South Wales a state of affairs that I may venture to say would not be tolerated in any other country which has pretensions to being progressive and moderately civilized. In no other profession, trade or calling are to be found so many incompetents, who, on the strength of a brass-plate and a brazen pretension, batten on the gullibility of the public, and reduce the standing of the profession to a mere empiricism. Up to the end of the year 1900 the ranks of dental practitioners were recruited by a very large percentage of men who, having failed miserably at other callings, have fallen back on dentistry as a last resource, as a means of easy livelihood, not calling for any particular ability or preparation in study and experience.

In one town of which I am cognizant, out of six practitioners, three commenced practice when well on in middle life, one having been a chemist, one a timber merchant, and one manager of a butter factory! Fortunately this percentage is leavened by a certain number who have graduated in the States and in England, and others who have left college to serve for a period of years as pupils to properly qualified men.

The reason for this deplorable condition is not far to seek. Little else could be expected of a statute book, which, until the present year, contained no Dental Act, and of a state throughout the length and breadth of which there was no college for the dissemination of dental science; where the erstwhile hod-carrier was allowed to wreck the public's teeth, and with impunity cause the disablement or even death of his too confiding patients. But this is not caused by the laxness of the Government only, but very largely by the ignorance and indifference of the public to the importance of things dental. You in the States have to deal with a class of patients which has awakened to the true importance of the profession, people who have been better informed and educated up to its advantages,

and more especially those of the conservative branches. Here, not one person in twenty knows of the utility of fillings and crown and bridge work, nor in fact of any conservative operations. Their sole remedy is extraction, to be followed by cheap rubber dentures; this more especially in the country districts. In the large cities people are rapidly becoming more aware of the advantages of visiting the dentist early and often.

This public ignorance is a very serious matter, both for the state and the profession, and must continue until the majority of practitioners are worthy and educated men, who have fitted themselves for their arduous duties, and have passed stringent examinations by sheer merit.

But, coincident with the commencement of the new century, the darkest days of the profession in New South Wales are now over, and without being too optimistic, we may look forward with some ray of hope to the consummation which has been so long

and so devoutly wished. About the end of 1900, after many attempts, Dr. Graham, M.L.A., introduced and carried through both houses of Parliament a Dental Act which embodies, with others, the following provisions:

1. The appointment of a Dental Board to consist of two doctors, four dentists, and two lay members.

2. Penalties to be inflicted on any person, other than a medical practitioner, who makes use of the title of dentist, dental surgeon, or any initials, title or description implying that he is registered under this act by above Board, unless he has been so registered.

3. Qualification necessary to registration to be as follows:  
Any person who—

(a) Has for two years before January, 1901, been bona fide engaged in New South Wales in practice of dentistry, and has applied within twelve months to be registered; or,

(b) Has attained the age of twenty-one years, and has been acquiring professional knowledge of dentistry for not less than four years, and has passed the Board's examination; or,

(c) Has reached twenty-one and has been pupil for two years to a dentist entitled to be registered under this act, provided that such pupilage commenced six months before act was passed and expired before application; or,

(d) Has obtained diploma or degree in dentistry in an Australian University, or has practised for not less than twelve months beyond New South Wales and holds some recognized certificate and proves to the Board to be of good character.

This, as is usual with such measures, allows those empirics already

in practice to continue, but these will gradually be weeded out by passage of time, and we may reasonably look forward in a few years to a profession as pure in the average as that of most countries.

**Dental College  
Founded.**

And yet another step has just been made in the march of progress and reform. As a natural sequence to the act, a dental school has been founded in connection with the Sydney University, and will open its doors to students this month (March, 1901).

The curriculum covers a period of three years, and the entrance is the ordinary matriculation examination of the University, with a proviso allowing apprentices of twelve months' standing to enter without preliminary examination before March, 1902. Practical surgical instruction will be given the students at the Sydney Hospital. At the conclusion of their course, they are entitled to the degree of L.D.S.

No greater compliment could be paid to the United States school of dental thought than the selection of the lecturers for this institution. Of the three lecturers in surgical dentistry two, Drs. Hinder and Pockley, are graduates of Philadelphia, while in the prosthetic branches all three, Drs. Nathan, McTaggart and Du Vernet, are from that university.

And under the able guidance of these gentlemen, let us hope that the youth of this State of New South Wales will lift the profession from its present reprehensible position to that place in the public esteem and trust, which it should by right possess.

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## **Pulp Mummification.**

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By DR. LAURITZ BOSGARD, Cooma, N. S. W.

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The subject of pulp mummification having recently received considerable attention by the profession, I desire to state my experience in this mode of treatment.

I have used the mummifying paste prescribed by Dr. Soderberg, and published in a previous number of *ITEMS OF INTEREST\** since 1896, in several hundred cases and upon patients of all ages and temperaments, so far without one single failure. In a few cases I have removed fillings inserted over mummified pulps and have found the canals in a perfectly aseptic condition, the canal brooch upon removal smelling sweetly of thymol.

At first I only used this method on molar teeth, always extirpating the devitalized pulps of incisors, cuspids and bicuspid, but recently I

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\*April, 1899.

have extended its use to all teeth, believing this treatment to be more satisfactory and less dangerous as regards the probability of abscesses forming than the removal of the pulp and subsequent insertion of a root filling.

As the subject has already been widely discussed, I do not desire to offer any remarks upon its merits or otherwise, but wish merely to state that I have no sympathy with those who object to this treatment on the ground that, being so much easier than pulp extirpation and root filling, it may lead to slovenly work. If the mummification process is as satisfactory in its result as any more complicated and difficult process, then surely we owe it to our patients to adopt the method which will give them the least pain and discomfort. There can be no doubt that it requires more skill and occupies more time to properly remove the whole of the pulp and to fill the canals to the apex than merely to mummify the pulp, and therefore, by all means let the former method be taught in all dental schools; but the dentist in practice would hardly be justified in wasting his own and his patients' time and adding even the slightest unnecessary pain merely to exhibit his skill.

But there is one danger which I admit exists in this treatment, namely, that it may lead to unnecessary devitalization of pulps. The ease with which this operation can be performed, and the certainty of absolute relief from toothache, which will follow, may tempt many to destroy pulps which could, and should, be saved by capping. Whatever may be the opinion of the individual dentist as to the value of the dental pulp in adult life, I suppose that at least the majority of them would consider it wrong to unnecessarily destroy the vitality of a pulp.

<b>Destruction of Tooth Tissue Avoided.</b>	One most valuable feature in the mummification process is the saving of tooth structure which can be effected. There is no necessity to cut away good enamel and dentine in order to gain access to the root canals, which would be necessary in the thorough removal of the pulp and efficient filling of the canals. Only quite recently one of my patients presented himself with buccal cavities in the second and third upper molars, the orifices being quite small, but the decay having reached the pulps causing sufficient pulpitis to call for the destruction of both pulps. In the orthodox manner I would, in order to save those teeth, have been obliged to drill away a considerable portion of the crowns to reach the canals, whereas, by the aid of the mummifying paste I merely opened up the pulp cavities, removed the contents of the main chamber, leaving canals untouched, and was thus enabled to finish the operation without depriving my patient of any undecayed tooth material whatever.
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No discoloration of any tooth thus treated by me has ever occurred.

The pain which in some cases follows this operation, owing to the contraction of the pulp, I find so slight as to hardly merit any consideration.

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### **A Case of Late Eruption.**

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By DR. W. SANFORD COTTRILL, Heidleberg, Transvaal, S. Africa.

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The illustration shows a first lower molar, which is interesting as a dental deformity. It was not erupted until after the patient (a young German lady) was past twenty-one years of age—the wisdom tooth on the same side of the jaw having erupted some time previous to the appearance of this first molar.



Not only is this tooth interesting by reason of its late advent, but also for its abnormal crown, and possessing but one root, which is very subnormal in size.

The patient had suffered great pain during the eruption of this tooth, which was increased by dental caries attacking it as soon as erupted.

There not being sufficient room between the bicuspid and second molar, it had grown out of the dental arch with a lingual tendency.





## Investing and Investment Materials.\*

By HART J. GOSLEE, D.D.S., Chicago, Ill.

### IV.

Object of Investing. Requirements of Material. Materials Used. Physical Properties. Models. Requirements of an Investment. Preparing Case for Investment. Hard Wax. Adhesive Wax. Investing. Small Cases. Extensive Cases. Precautions. Removing Wax. Preparation of Investment. Drying and Heating. Prepared Compounds.

One of the most important features to be observed in connection with the process of soldering is the proper investment of the case, the object of which is to sustain the relation of the parts and preserve a uniformity of temperature during and succeeding the application of heat.

By investing the parts the uneven or too rapid heating or cooling of porcelain facings and the consequent attending dangers are obviated, and any possible change in the individual relation of the parts while being united or assembled is entirely overcome.

#### **Object of Investing.**

A suitable compound for such purposes should possess the essential properties of crystallization, infusibility, free conductivity and strength, and should neither shrink nor expand appreciably during the

#### **Requirements of Material.**

heating process.

heating process.

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**Materials Used.** Many substances may be used in combination with plaster of paris, which is necessarily the basis because of imparting the property of crystallization, and which must be incorporated to the extent of at least 50 per cent.

The remaining proportion may be then composed of such materials as will, by virtue of their characteristics and physical properties, meet such requirements. The following are serviceable:

Powdered Silex,	Pulverized Pipe Clay,
Fine Asbestos,	Powdered Fire Brick,
Beach Sand,	Magnesium Sulphate,
Marble Dust,	Pumice Stone.

A combination of any of these ingredients in varying proportions with the proper quantity of plaster will usually possess the necessary qualities, excepting pumice stone, which, because of its low fusibility and inherent tendency to expand, should never be used, and asbestos in large proportions, which, while serving to hold the mass together, when mixed, is objectionable because of its extreme low conductivity.

**Physical Properties.** The property of free conductivity is important because such material lessens the time consumed in heating the case, by absorbing and distributing the heat more rapidly and evenly, and by thus retaining it the better the soldering is facilitated, and the liability of checking porcelain facings diminished.

A tendency on the part of any compound to expand and crack open when subjected to the influence of heat usually indicates that the texture is too fine to admit of the rapid evaporation of the moisture, and as possible displacement of the parts and checking of facings is thereby promoted, the use of such material is objectionable and unsafe.

By the addition of a coarser ingredient to the compound, however, this fault may be overcome, and a small quantity of fine shredded asbestos will also frequently eliminate the objection in a measure, without greatly reducing the property of conducting heat.

**Models.** While, generally speaking, all models should be made of plaster alone, because of thus possessing greater strength, smoother surfaces and more accurate and definite outlines, while offering no impediment to successful soldering when properly prepared, there may be frequent indications for making them of investment material.

In such instances a material which will shrink or expand appreciably is decidedly objectionable, and the characteristics of that used for such purposes must be of known quantity, for the reason that a degree of in-

accuracy in the relation of the parts and their proper adaptation may result.

Where such a model seems indicated and desirable, and especially for the purpose of the final assemblage of the parts in extensive cases, a smooth, well-defined surface may be secured by first pouring a small quantity of thin, well-mixed plaster into the impression, then inverting the cup until all surplus runs out, leaving only a thin surface coating, when by being immediately filled with the investment material, a model is obtained possessing a veneer of plaster.

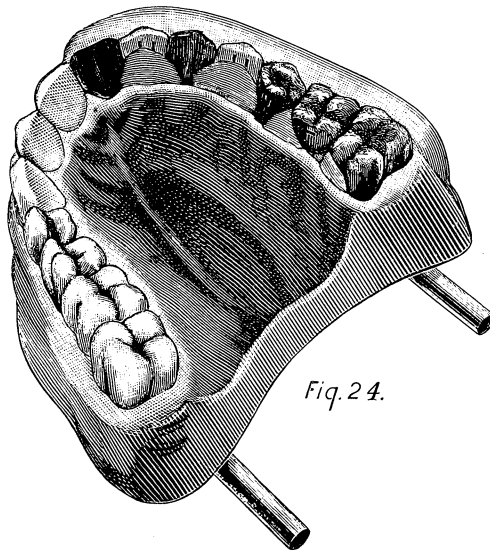


Fig. 24.

**Requirements  
of an Investment.**

As the object of investing is to hold the parts in their proper relation and afford protection to the facings, it is but necessary that the investment should be *only large enough* to accomplish this end.

Any surplus in excess of merely meeting such a requirement increases the heat necessary and adds to the labor involved in the process of soldering, without any possible advantage whatever.

**Preparing Case for  
Investment.**

In assembling the individual parts on the model, some means should be observed which will temporarily sustain their accurate relation until they are safely transferred to the investment. In this particular it is necessary that they should be so securely united as to prevent any possible displacement during the process of removing from the model, and the subsequent imbedding into the investment material, with a substance sufficiently tough and strong to withstand such procedure.



This is usually accomplished by using a hard or adhesive wax as a medium of cementation, which in large cases may be further supplemented by covering the facings and crowns from the buccal or labial surfaces with a thin layer of plaster or investment compound previous to removing from the articulator. (Fig. 24.)

In interrupted bridges or where some adaptation of bars or rests to a proper relation with the natural teeth is indicated, it may often be done to better advantage after the case is invested than when on the model. In such instances by extending or continuing the wax over these teeth so as to secure an impression of them before detaching and investing, their accurate reproduction may be secured in the investment.

For the purpose of thus securely cementing the parts a hard wax composed of from two to four parts of resin and one of wax is reliable and much used. The combination forms a stiff, brittle substance, which for convenience should be rolled out into sticks of suitable size and length. These may be kept indefinitely by coating the surfaces with whiting or plaster to keep them from adhering to each other. Parr's fluxed wax may also be used for the purpose.

The brittleness of hard wax is overcome by adding gutta percha to the combination of resin and wax in suitable proportions to impart greater adhesive qualities, which is sometimes indicated and advantageous.

When the various parts are securely and firmly united, the wax should then be carried over a considerable surface of the abutment, crowns and caps, including every portion of the work not to be subsequently covered by investment material. This procedure serves to keep such surfaces clean and free of dirt, and leaves them fully exposed in the investment, by guiding the flowing of same over only those parts which should be covered and protected.

In all cases, ranging from a single crown up to four or five teeth, the abutment crowns and caps should be detached from the model, previous to cementing the parts, in such manner as to preserve their definite outline and relation. Upon being again replaced in their proper position all of the individual parts may be assembled and cemented together, when the whole can then be easily removed and invested. This eliminates the destruction and investing of the model and preserves it for future use in case of desire or necessity.

In larger cases, however, it is not usually good policy to follow this procedure, because of the increased liability of an inaccurate replacement of the

abutment caps and crowns, especially if there be more than two. In such instances it is always safest and best after assembling and cementing the parts firmly to first remove the model from the articulator, and then trim away all surplus plaster until only enough remains to sustain the relation. (Fig. 25.) This, then, precludes the possibility of any disarrangement or displacement of the parts, and the remaining plaster is of no significance if entirely submerged and completely covered with the investment material.

The investment compound should be mixed of  
**Precautions.** a moderately thin and plastic consistency, so that when the proper quantity is poured upon a piece of paper it will offer no resistance in pressing the case down into place, until it is properly submerged and sufficiently covered. If too stiff there would be danger of a change in the relation of the parts.

To make sure of a close adaptation of the material to the facings and other parts, and to hold them securely when invested, all surplus wax and dirt should be carefully removed and the case dipped in water just previous to bringing it in contact with the investment material.



Fig. 25.

The *interior* of all crowns and caps unless previously *well filled* with plaster should then be first thoroughly packed with the investment material by using a small piece of wood or fine-pointed spatula; because if not perfectly filled the presence of air spaces, into which the heat becomes concentrated during the process of soldering, will materially increase the liability of burning or fusing the parts, an accident which for this reason not infrequently occurs.

After the investment has become thoroughly  
**Removing Wax.** hardened and the surplus trimmed away, the wax should be slightly warmed by passing over the flame and removed as well as possible with a small knife-blade or other pointed instrument, being careful not to loosen or dislodge the parts in so doing.

Hot water is sometimes used to remove it, but such procedure is objectionable for the reason that the moisture disintegrates the compound, interferes with its perfect crystallization, and requires more time in drying out and heating up than would otherwise be necessary.

Choloroform, being a solvent of wax, is also used to remove remaining particles, but this is entirely unnecessary, because the wax will be ab-

sorbed by the investment and ultimately burned out entirely during the heating process.

**Preparation of Investment.** As soon as the wax has been sufficiently removed, the investment should be trimmed down until no larger than is absolutely required, thus leaving all surfaces upon which the solder is to become attached *freely exposed*, so as to offer no impediment to the heating of the case. No danger will accrue from this free exposure of the

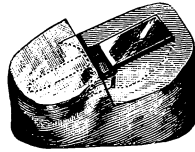


Fig. 26.

parts if the porcelain facings are covered and the interior of crowns and caps well filled, and the labor involved in the process of soldering will be materially lessened.

The investment for a single crown should be cut away from the approximal sides on a line with the backing and cap. (Fig. 26.) Where this is not observed and the investment remains banked up on these sides,

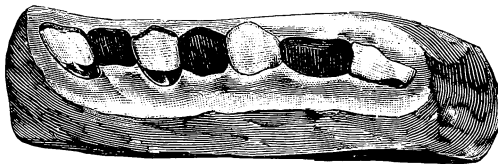


Fig. 27.

the crown is imbedded into a depression, and the soldering is made much more difficult because the flame and heat from the blow-pipe is thus deflected from the parts.

This applies as well to more extensive work, and should always be closely observed. The proper exposure of the metal parts and the necessary trimming away of the investment for larger cases is illustrated in Fig. 27.

**Drying and Heating.** When the preparation has been completed and all particles of debris removed, the parts should then be fluxed, and the case placed upon the burner until it gradually becomes sufficiently heated to proceed with the soldering.

Many devices are provided for holding the case in the flame, but the simplest, most useful and economical method is to put it upon a piece of the ordinary metal lathing used in plastering, which is made of iron and is more or less durable, and then place this upon the spider over the flame. (Fig. 28.)

Several preparations possessing the required **Prepared Compounds.** qualities to a greater or less extent can be easily procured, among which may be included Dr. R. C.

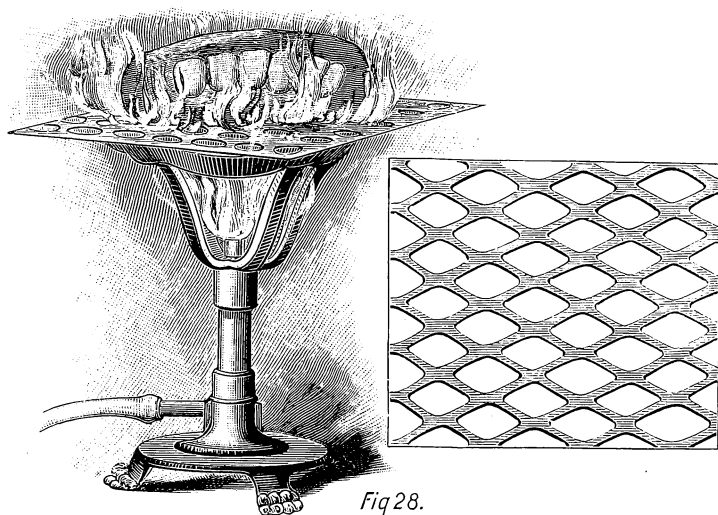


Fig 28.

Brophy's "Imperial Investment Material," the investment compound made by the Consolidated Dental Manufacturing Company; "Sump," prepared by the S. S. White Dental Manufacturing Company, and "Teague's Compound," all of which are of special merit and can be highly recommended.

## **Crown Work.\***

### **Indications and Requirements.**

By HART J. GOSLEE, D.D.S., Chicago, Ill.

#### V.

Indications: Extensive Caries. Accidental Causes. Discoloration. Malformation.  
Malposition. Requirements: Physiological Relations. Anatomical Relations.  
Stress. Articulation and Occlusion. Approximal Contact. Mechanical Relations. Method of Attachment. Dowels. Telescoping.  
Fit. Strength. Esthetic Relations.

Before one is properly prepared to consider the manipulative procedure incident to the detail of construction of artificial crowns, a clear conception and a thorough understanding of the indications for, and requirements of such substitutes for the natural crowns of teeth as are generally applicable today are essentially necessary.

It does not matter particularly in what line of art or mechanics one confines his efforts, to meet with success in the direction chosen requires, first of all, the necessity of formulating in the mind, or picturing in the mental eye, the result of the contemplated effort in the finished state, before even commencing the detail of its construction.

To thus conceive the possible result before the execution, in a work where art and mechanics are so closely blended with nature, greatly enhances the possibilities by cultivating the possession of those lucid and perceptive ideas which are so essential to success if success is dependent upon the attainment of special skill, as it should be.

And yet while dentistry offers no greater opportunities for the acquirement and display of the highest artistic talent than in the field of crown-work, such prerequisites alone will not always insure success, but must be supplemented by a degree of accuracy, facility and delicacy in instrumentation which will at once inspire the confidence of the patient.

Thus will he be the better qualified to obtain results more accurately restoring the normal functions and more closely approaching a reproduction of nature; and to perform them for the most nervous, sensitive patients with more gratifying success to all concerned.

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In this field, as in many others, those methods which are *quickest* and *best* are not necessarily synonymous, and so it often becomes a matter of judgment and discrimination as to the employment of the particular method most applicable to the case at hand, in which the operator must be governed only by the most scrupulous and conscientious efforts.

While there may frequently be several methods of procedure that, at the first conclusion, seem apparently applicable, there is usually one in particular which upon closer observation will best meet all of the requirements.

### Indications.

The employment of artificial crowns is indicated in extensive loss of tooth structure from the ravages of caries, or accidental causes, and not infrequently because of discoloration, malformation and malposition, as a means of substitution for the correction and restoration of impaired function, and relief from disfigurement. There should always be enough tooth structure remaining, however, to insure sufficient anchorage.

By far the most general indication is in those instances where the natural tooth structure has suffered such irreparable loss from the process of caries as to make restoration by filling, with any assurance of permanency in the operation, either inadvisable or impossible.

#### Extensive Caries.

In those cases, however, where it seems a matter of conjecture as to the advisability of filling or crowning, unless for esthetic reasons, the preference should be given to filling, if such procedure may seem to offer any certainty of a reasonable degree of success and permanency.

In frequent instances the remaining walls of badly broken down teeth may be protected and usefulness restored for many years by the insertion of a post into the canal, and the building of a filling around it, and such a course is often indicated for the reason that the crowning operation may then be deferred and become a subsequent and possibly remote necessity, which would perhaps add to the aggregate longevity of the root.

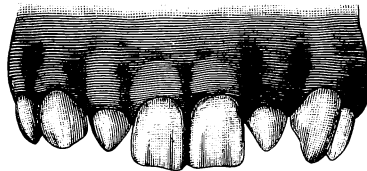
Moreover, the presence of a well-adapted filling is no doubt more conducive to the preservation of the normal condition of the surrounding tissues, than the most skilfully adapted crown.

The loss of a portion or all of the natural tooth crown, as the result of a fall or blow, in the anterior region; or from overstrained masticatory action upon hard substances in the posterior region, is by no means uncommon, and usually calls for immediate relief in their reproduction and restoration.

#### Accidental Causes.

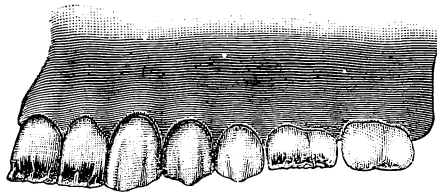
**Discoloration.**

The presence of a badly discolored tooth in the anterior part of the mouth, which persistently refuses to succumb to repeated efforts at bleaching, may



*Fig. 29.*

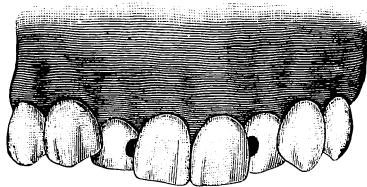
often indicate an artificial substitute as the only means of effectually and permanently remedying its conspicuous and objectionable appearance.



*Fig. 30.*

**Malformation.**

In such conditions of faulty enamel formation as the so-called "peg" laterals (Fig. 29) and the pitted enamel structure, as is frequently found to exist in the first permanent molars and the anterior teeth (Fig. 30), the



*Fig. 31.*

application of an artificial crown may often be indicated as the best means of restoring usefulness and affording relief from disfigurement.

**Malposition.**

There are frequent instances of simple irregularity of the anterior teeth, where the age of the patient, together with the presence of caries or other

conditions may not seem to warrant their correction by the process of regulating. Often the desired effect may be obtained by sacrificing the natural crowns and substituting artificial ones as the most simple and artistic means of correcting the deformity. (Fig. 31.)

### Requirements.

The success of crown-work in the various phases of its application, and the degree of permanence in the operation, combined with the esthetic results obtained, depends upon a close observation of the requirements from a physiological, anatomical, mechanical and esthetic standpoint.

When it has been determined that a crown is indicated or seems to be the most advisable procedure, it is first necessary to ascertain the condition of vitality of the immediate and surrounding tissues.

If pathological conditions exist, every effort should be made to locate and remove the cause, and the usual remedial or medicinal agencies should be applied until the tooth or root assumes as healthy and normal a condition as possible before proceeding further with the operation.

This particularly includes the *thorough disinfection* of the remaining tooth structure, and the removal of all that may prove irritating to the periodontal membrane. The precaution is necessary because the presence of an artificial crown should not afford any more reason or opportunity for the deleterious action of disease-producing agencies than when the tooth was in a normal healthy condition; indeed, it should even further fortify it against attack.

In regard to anatomical relations we are governed by the position of the root and the artificial crown supported by it in their relation to the adjacent and antagonizing teeth, which includes the consideration of stress, occlusion and approximal contact.

The roots of teeth carrying crowns are subjected to the influence of stress in different directions, according to their location in the arch, which fact demands that the construction and application of artificial crowns should be made with a view of affording a degree of resistance sufficient to secure the greatest integrity of both.

As the line of the greatest natural resistance is in the vertical direction, every provision should be made tending to prevent undue and unnatural stress, which might ultimately cause displacement, trouble, or possible loss of the root.

In the anterior teeth the general tendency of the stress imposed is to



force them outward and forward, which may and should always be relieved as much as possible by the proper preparation of the root, the restoration of approximal contact, and the method employed for the attachment of the crown.

In the bicusps the stress is received in both vertical and lateral directions, which demands a firm seating to accommodate the former and a strong method of anchorage to overcome the latter.

The molars are least susceptible to displacement for the reason that lateral stress is limited in proportion to the degree of the normal accuracy of occlusion; and as the greatest stress is in the direct or vertical line, the essential requirement is a good firm seating, supplemented by accurate occlusion.

**Articulation and Occlusion.**

The degree of usefulness and longevity of the artificial substitute depends greatly upon such formation of the articulating surfaces, and in the posterior region the arrangement of cusps and sulci in their relation to the antagonizing teeth, as will restore their normal functions. The arrangement should provide for correct position not only when the teeth are in direct occlusion, but also in their articulation or the act of bringing them into occlusion.

The evils of faulty and imperfect occlusion are often apparent, and result frequently in marked manifestations of virulent periodontal and neurotic troubles.

**Approximal Contact.**

The feature of the restoration of approximal contact is of the greatest importance, and is made so because of the necessity for protecting the tissues in the interproximal spaces from the serious results of irritation.

These tissues promptly rebel against the slightest irritating influences to such extent as to demand the most stringent efforts toward their protection and preservation.

**Mechanical Relations.**

Due thought should be bestowed upon the method of attachment, fit and strength of artificial crowns, all of which are so necessary and add so materially to the durability and degree of permanency in the work from a mechanical standpoint.

**Method of Attachment.**

Two general methods of attachment are employed, each or either of which may be indicated by the style of crown required, and the amount of tooth structure to which the attachment may be made.

**Dowels.**

In roots which are even with or approximating the gingival line, attachment must necessarily be made by inserting a dowel in the direction of their longi-

tudinal axis to a depth where possible equal to the length of the crown from cervix to incisal or occlusal edge.

Such a mechanical fixation, whether the dowel be previously attached to crown or root, practically precludes the loosening of the parts from strain, at the line of junction, overcoming leverage at that point, by distributing it throughout the length of root, and forms a most secure means of anchorage.

Where enough of the root is freely exposed to afford a firm grasp of the crown, the attachment may be securely made by telescoping, in which the strength at the line of junction naturally increases in proportion to the surface of tooth structure covered by the crown.

The relation existing between the crown and root is of the greatest possible importance, because the ratio of subsequent failure or trouble arising from the progress of caries, or from gingival or periodontal irritation, is decreased in proportion to the degree of accuracy in the adaptation.

The crown should be seated firmly upon the root, and if no band is used the adaptation should be close enough to make a joint as flush and impervious as possible, so that the end of the root may be thus protected.

When a band is used, it should pass under or within the free margin of the gum a uniform distance on all surfaces of the tooth and *only* far enough to cover and protect the seam of union, which should be in such close proximity to the root as to preserve its continuity and make a smooth line of junction between the two.

The durability of this work depends to a very large extent upon its inherent strength, which it should always possess to a degree sufficient to permanently withstand the stress of mastication, even though it be gained at the sacrifice of more or less artistic results when occasion requires. Any tendency toward undue economy usually proves disastrous.

These considerations embrace the field which gives the greatest possible scope to the individuality and artistic temperament of the operator, and while it is true that art can never entirely and completely take the place of nature, the aphorism is less applicable to this special line of work, perhaps, than to any other department of dentistry or department of art.

To secure the highest artistic results, the artificial crown should preserve the gingival outline, and the symmetrical alignment of the teeth should be proportionate in length with the adjacent teeth, and if of porcelain should closely match them in color, and should correspond favorably

in general form and characteristics with its fellow member of the opposite side of the arch.

As a rule, where porcelain is used no metal should be exposed to view from any surface, unless purposely done to more closely match the adjacent teeth or the corresponding tooth.

In instances where the remaining natural teeth are freely filled with gold, the artificial substitute should often carry fillings which will enable it to more closely resemble and harmonize with them, thus making detection more improbable, which legitimate deception is a true evidence of artistic endeavor.

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## **An Application of the Kingsley Splint in Fracture of the Inferior Maxillary.**

By J. D. REYNOLDS, D.D.S., Marietta, Ga.

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On November 7 Mr. G. White, age 23, while trying to throw a belt in the Brumby Chair Factory, was caught by his clothing and violently thrown. This traumatism resulted in a fracture of the inferior maxilla, complicated with a wound in the soft parts, under the body of the jaw, which on the introduction of a probe was found to extend entirely through the floor of the mouth, accompanied with considerable swelling of the face and surrounding parts.

The fracture was a vertical break through the body of the jaw, posterior to the mental foramen, on a line between the second bicuspid and first molar teeth, which were in comparatively good condition, the first molar, however, being quite loose in its alveolus, a result of the fracture.

On the morning of November 8, in consultation with the physicians, it was decided to adjust an interdental splint of the form suggested by Kingsley, as it was thought that this form of splint would give better support to the parts, and also allow of free access to the wound in the soft tissues which would need drainage and treatment.

The splint was constructed as follows:

An impression of both jaws was procured in plaster, and the models were articulated in the usual manner; then on the model, the surface of the teeth to be covered by the splint was painted with a solution of

dental gum (red rubber) dissolved in spirits of turpentine to a thick creamy consistency.

The rubber was next warmed gently, pressed to place on and around the teeth forming the rubber portion of the splint.

The solution of rubber was used to hold the rubber in close apposition to the model. After the rubber was thoroughly adjusted small pins were driven through the edge of it into the model to more firmly hold it in place. The next step was to shape the wire supports, to extend on the external portion of the jaw (Fig. 1.)

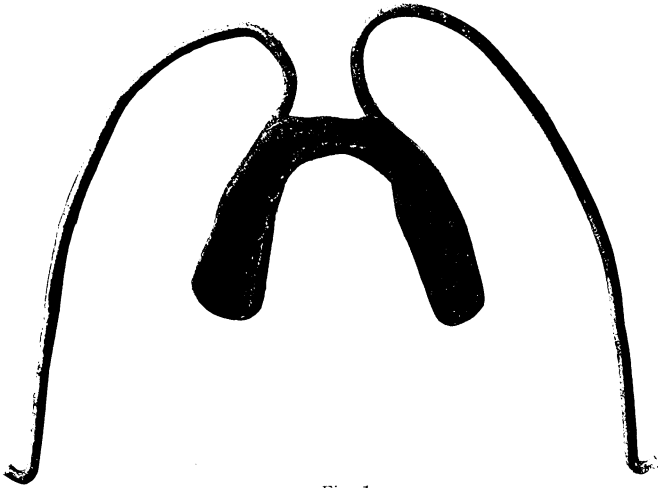


Fig. 1.

These wires should be so bent as to conform to the shape of the face, set in the rubber so that they will not depress the lower lip and fit comfortably in the corners of the mouth. These were flattened and roughened at the end to be fastened in the rubber and warmed and carefully imbedded in position. The case was then ready to invest and vulcanize.

For the want of a more suitable flask, a tin box of sufficient size to admit the model, with a small space cut from each side for the wire supports, which extended out into the vulcanizer, was used.

The case was then placed in the box, which was filled with plaster, the cover adjusted and the box tightly wrapped with binding wire, and vulcanized and finished in the usual way. In adjusting the splint in the mouth, the ends of the bandage which pass under the jaw were saturated with sandarach varnish to keep them from slipping on the wires.

A still better method would have been to cut small barbs, running in opposite directions on the portion of the wire being covered by the bandages. The wire used must be a heavy steel wire of about No. 10 gauge, because to properly balance and hold the splint in place considerable pressure must be applied to the bandages. Fig. 2.

Small hooks were bent on the free ends of the wire, as seen in the illustration, to assist in better holding the bandages. The patient was instructed to be diligent in the use of antiseptics in his mouth, and was



Fig. 2.

furnished with a small rubber syringe to be used in and around the splint to aid in keeping it clean. The splint allowed the patient to talk and take nourishment, which consisted mostly of liquids, with comparative ease.

After the fourth or fifth day the bandages were tightened to take up the slack caused by the reduction of the swelling in the parts, by simply placing a new bandage over the one already in place and drawing it up to the proper tension, thereby disturbing the parts as little as possible.

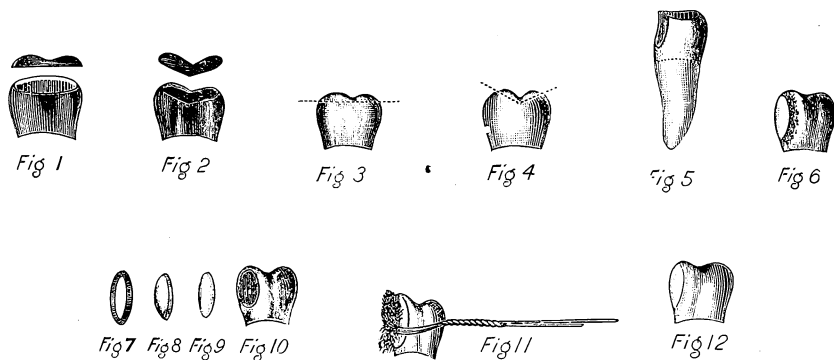
This splint was removed December 14, 1900, after having been worn thirty-five days. The bones were found to have united, and the patient resumed his position at the factory.

## Porcelain Veneer for Gold Crown.

By HENRY PEACH, D.D.S., Sydney, Australia.

In the drawings of the bicuspid or molar cap, which accompany this, there will be found two special features which, as far as I can discover, have not previously been pointed out.

The first is in regard to the cusps, which by this method are deeper, more naturally shaped, and in which the articulation can be more accurately obtained, at the same time only sufficient gold being used to withstand the abrasion of mastication, a not insignificant factor when cost has to be kept in view.



The second feature is that the surface presented to view—the buccal—is of porcelain, but so thin as to take up hardly any of the space within the cap, thus necessitating but little if any extra cutting of the tooth substance. At the same time it is so perfectly protected that fracture is almost impossible. In the bicuspid region especially, which is neither within nor entirely out of sight, this will be appreciated.

With the assistance of the diagrams I will endeavor to describe its construction.

In regard to the cusps, Fig. 1 will illustrate the usual method of construction which previous to affixing the cusps has a flat filed top, and Fig. 3 shows the short unnatural appearance resulting. Fig. 2 shows a band shaped up with perhaps a little more inward bend towards the occlusal end, and filed out with round side of the file, mesio-distally, into a deep groove, to fit which the cusps after striking up in any shallow die-plate (personally I use Mitchell's), are gently bent in the jaws of the

hand vise, soldered and cut down in the ordinary way. Fig. 4 illustrates with what different result. It might be pointed out that the anatomical shape of the periphery of the dentine would seem to approve this method, as it does not then become necessary to cut deeply into that tissue, but only to partly denude it of enamel, thus rendering devitalization unnecessary (See Fig. 5).

**The Porcelain  
Facing.**

Having mounted the cap on a piece of stick to permit handling, it is now freely cut away on the buccal surface with the flat portion of a gold file, leaving uncut a narrow band at the cervical margin, Fig. 10. A cuspid tooth is selected, mounted with shellac face downward on a piece of cork, and reduced with the carborundum to a thin veneer of suitable size and fitted to this cut surface. Fig. 8—Holding it in place with some wax within the cap, fill out any irregularities of its external edge, also with wax, to obtain a perfect contour, as shown in heavy shading on Fig. 6. An impression is obtained in moldine, care being taken that the fusible metal die when cast should show well over the buccal cusp. On this a piece of 22k. gold, about 32 gauge, is struck up, completely covering the porcelain, and extending half a line in every direction beyond it. This is trimmed and an opening made in its face of a size to expose a sufficient surface of porcelain. Fig. 7—A piece No. 60 foil gold slightly larger than the base of the porcelain is prepared. Fig. 9—And all put in position—cap, foil gold, porcelain, retainer. The facing is now covered with small piece of sheet asbestos and the whole wired in position. Fig. 11—And a little solder carefully flowed round joint of retainer, and completed as Fig. 12.

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## **A Perfect Fitting Gold Crown.**

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By DR. H. ROBIN ADAIR, Atlanta, Ga.

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The gold crown has come to be such a common resource that too little attention is given to it as to fit and usefulness. To my mind, the gold crown is the most abused class of work of the dentist, when in truth it should receive the most vigilant care and skill.

The difficulty I find with all methods now in vogue is their extreme inaccuracy as to fit and articulation and the trouble of getting the stamped cusp soldered on the band at the right place. Again, the large quantity of cement required to hold crowns in position is an objection, as shown by Fig. 1. Lastly, it is next to impossible to keep the solder from getting on the inside of band, thus preventing what otherwise would be a fine

fit. When they are polished, the joint between the cap and band is the weakest part (the polishing often leaves a hole at this joint) just where should be the strongest portion of crown.

The ideal crown should be a close reproduction of the original tooth crown. The inside of crown should fit all sides of tooth from top to bottom. The articulation with the opposing tooth or teeth should be accurate. It should have a degree of strength and thickness to hold a bridge and resist the wear of mastication. To my mind none of the present methods of constructing crowns attain these ends.

Last summer it was my pleasure to make a tour of the East, visiting the offices of many of the most prominent dentists in the United States. Among them Dr. George Evans, Dr. E. Parmley Brown and Drs. Shields



Fig 1



Fig 2



Fig 3



Fig 4

and Jernigan. These gentlemen showed me every courtesy in explaining their methods, which was greatly appreciated. I have tried to incorporate the results of my investigations in this crown.

To add to my difficulties, I had learned the Evans method of setting crowns with gutta percha, and had been convinced of its usefulness.

A careful study of the figures used show my method of construction better than a description. I take my measure and make a band to fit the remaining tooth structure from cervical border to grinding surface, no matter how small or broken down. I cut the band from 29 gauge pure gold, leaving it a little broader than usual. Before soldering I place on tooth and burnish it accurately to side of tooth. If tooth be beveled as in Fig. 3, I cut out a V-shaped piece from the occlusal end of band. Remove and solder band. Cut two or three slits down the grinding surface of band, and burnish these over the top of the remaining crown as in Fig. 2. Now we have band fitting perfectly, even on occlusal surface of the root. With any of the cusp-forming methods, swage up a cap; be careful not to cut surplus off too close to cusp. I save up a number of well defined extracted teeth, and selecting the one that approximates the tooth I wish to crown, I imbed it one-third in moldine and run a metal



die, with which I swage my seamless cap out of 32 gauge pure gold. The seamless crown outfits can be used to make this cap.

The cap is now placed on the banded tooth. The patient is directed to bite into cap and hold jaw closed. While cap and band are thus held in this position, burnish sides of cap to band. Remove together and solder through the hole on inside of crown. If contouring be necessary, the cap can be easily spread out before soldering.

Fig. 4 shows a badly broken down molar, and the method of construction.

Some dentists have advanced the idea of soldering on a flat top to band; others of cutting a hole in this flat top to solder through. But I believe I can make a crown by my method while they are soldering on this extra top.

The advantages of this crown may be enumerated as follows:

1st—The ease and speed with which a crown may be made and polished.

2d—The proper distribution of strength.

3d—Pure gold at cervical margin is non-irritant and may be burnished close to root at cervical margin.

4th—No solder inside band.

5th—The small quantity of cementing substance necessary to hold crown, thus relieving patient of the disagreeable odor that always is present from a large bulk of cement.

6th—Gutta percha may be used to set with.

7th—A strong abutment for a bridge.

8th—A perfect fitting crown.

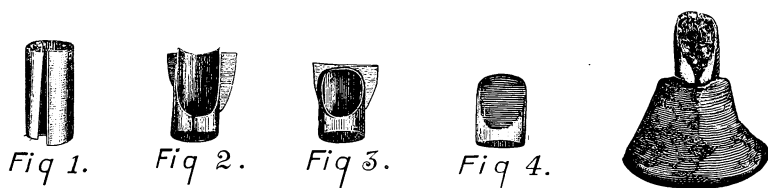
A trial of this method of construction for a gold crown will convince the mechanical dentist of its usefulness.

## Method of Making an Open Faced Crown.

By DR. F. E. BUCK, Jacksonville, Fla.

The method here described I believe to be new; at any rate it is, in my opinion, the simplest and quickest way of making an open faced crown.

A metal model, as shown in the illustration, can be used, but I prefer to operate directly upon the natural tooth, using gold and manipulating same with burnishers. In this way the proper fit and shape is much more readily obtained. Fig. 1 shows the first stage. A gold band simply curled.



Before soldering, a slit is made at each side and the end then drawn together, exposing a flapped back, as seen in Fig. 2.

The piece being accurately fitted at the neck is then to be soldered and the band returned to the natural tooth, when the ends of the side pieces are burnished over along the sides and cutting edges of the tooth, taking the shape shown in Fig. 3.

The flaps which form the palatal surfaces are now burnished tightly to the tooth and trimmed away, enough being left to slightly engage the side pieces, after which the whole is soldered, making an open faced crown, as seen in Fig. 4.



# ORTHODONTIA

## *A Regulating Appliance.*

By SAMUEL HASSELL, D.D.S., New York.

In presenting this device, I take it for granted that I have overcome some of the trials that almost invariably accompany our efforts to regulate teeth, especially in the mouths of children. I take it for granted for the reason that the results seem to bear me out.

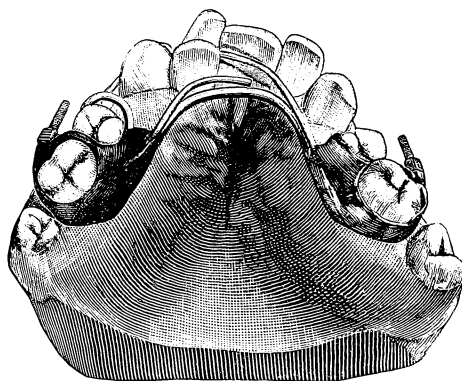


Fig. 1.

By the illustration (Fig. 1) it will be seen that the appliance is held securely in place by two Angle bands instead of the usual method—crib—thus preventing its removal by the patient, and thereby retarding the progress that otherwise would be made. While it must be conceded that the crib is useful in many cases, in my hands it has besides the disadvantage of becoming misplaced or removed, the necessity of making bands with lugs attached for all teeth that are to be moved.

This feature in itself requires time, and aside from that, unless great care is exercised in placing the wire under these lugs, we will have the teeth not only moved forward or backward, as desired, but also elongated, and this, of course, is a serious objection, as it often makes

our troubles greater than they were at the start. Then, too, we are well aware that the bands fastened to the teeth with cement have a tendency to become loosened and fall off, which means delay and discouragement, not only to ourselves but also to the patient.

This appliance was made of platinoid wire attached to the bands with soft-solder, making it a very strong yet simple device to construct. The patient for whom it was made was a boy fourteen years of age, and one not willing to stand any great amount of pain or inconvenience, and he now assures me that while the appliance was in his mouth he did not suffer in the slightest, nor did he object to wearing it.

It may be claimed that it was a cumbersome affair, but granting such to be the case, I can offer as an excuse for that that it was necessary to be so since so much was expected of it, and, besides, previous to inserting this particular appliance, I had attempted to move the cuspid back by attaching a band to the molar with a rubber fastened from one to the other. This plan was found to be anything but satisfactory after two weeks' trial, as instead of the cuspid moving back, it remained as solid as ever, and I found that the bicuspid and molar had come forward. Under the circumstances, I saw nothing to do but remove both band and rubber and allow my patient a few days' grace, and in the meantime try to think up something else, which proved itself to be the appliance here represented. With it either the cuspid was obliged to move back, or the bicuspid and molar on the right side come forward, and at the same time the left bicuspid outward and the molar on the same side rotate. In other words, these four teeth were working against one, which accounts for the success attained. It is my belief that a more constant pressure can be obtained by the use of wire (platinoid preferred) than by any other means, and by obtaining an even pressure constantly, we attain quicker results with less risk of injury to the pulp, but it seems to me that whatever appliance is used, it should be secure or power is lost.

It may be of interest to say that these teeth were brought to their present position in a little less than three months' time, and that without any of the difficulties that so often go hand in hand with regulating cases.

I do not for a moment consider that an appliance of this kind can be made for any and all cases, but I do think that the principle can be utilized advantageously in a great many instances where the teeth do not move easily, or where the patient is likely to remove anything we put in the mouth, and should any one else deem the plan that I present worthy of a trial, I feel sure he will be more than pleased with what he will accomplish.

It will be seen that by bending the wire, pressure was produced on

any desired place, and in this case I did not attempt to move the lateral until the cuspid had been brought back out of the way to some extent, and then it was a simple matter to push it forward as far as I cared to have it go, and as it progressed it assisted in moving the cuspid even more, and also caused the right central to rotate to some extent, as will be seen in Fig. 2. Up to this time nothing had been placed upon the right central, although it would appear so from the model. The left central was forced into place in exactly the same way as the lateral, by simply bending the wire and thus forcing it forward. My only object in submitting the second model is to show what the contrivance has done,

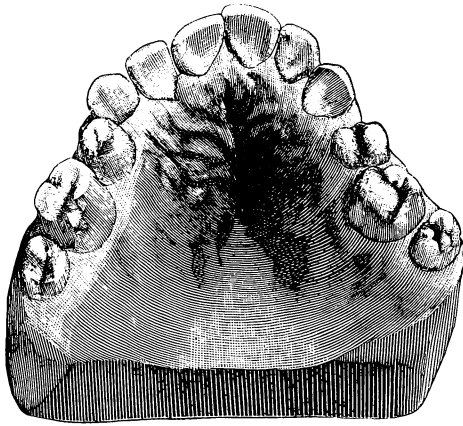


Fig. 2.

which seems to me to be very gratifying, although the case is far from finished except as far as this appliance is concerned. Once a week was as often as I considered it necessary for the patient to call, and at such visits I increased the pressure on the teeth that required it.

In reference to the bite, which is an important matter to consider, I would like to say that the lower teeth came up in the space between the lateral and central, and effectually locked the former in its position; but notwithstanding this state of affairs it was considered unnecessary to open the bite with any device, and therefore none was made use of, and no trouble experienced in this respect. In other words, the lateral moved forward as though there were no lower teeth to interfere with its progress, and just as easily as the other teeth whose positions were changed.

## **Exact Methods of Soldering in Orthodontia.**

By HERBERT M. PULLEN, D.M.D., Buffalo, N. Y.

The skilful soldering of regulating appliances is a task requiring the most painstaking care and patience, even by an adept, following the methods generally practiced, while the amateur often despairs of attaining dexterity in manipulation sufficient to produce that nicety of construction so necessary for mechanisms of this character.

I refer more particularly to the soldering of bands and the various attachments thereto, such as tubes, pinhead lugs, spurs, etc., as well as the various combinations of these tiny attachments, which are essential to the efficiency of the appliances in situ.

There are, perhaps, two chief causes for failure in making these attachments, viz.:

1st—The inability of operator to hold parts fixedly in exact position required, during soldering.

2d—The use of instruments for obtaining apposition containing too great a bulk of metal, such as heavy soldering tweezers, old excavators and the like, which take up so much heat that the band or other delicate attachment is often ruined before the fusing point of the solder has been reached, or an adjacent union becomes unsoldered from the overheating beyond the point held by the pliers.

After much experimenting and study to overcome these difficulties, I have at last perfected a set of soldering clamps, which not only automatically hold parts to be soldered in exact apposition while being united, but also by their delicacy prevent overheating of any part of the appliances.

Clamp No. 1 (see illustration) is designed for holding the ends of bands in apposition while being united with solder, also for soldering spurs to bands, and a multitude of miscellaneous uses, including its combination with another clamp while making an attachment.

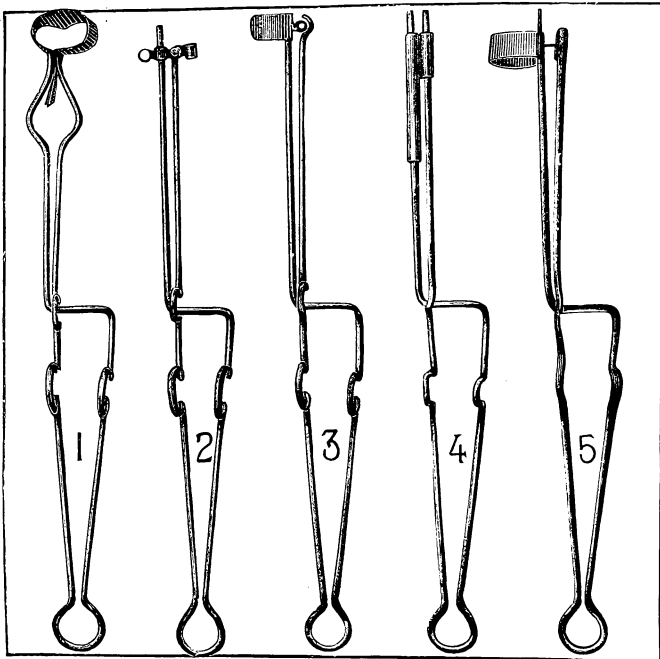
No. 2 holds in its tips tubes at right angles to each other, closely approximated, while being soldered, and is also useful for making attachments of tubes to bands.

The exact approximation and soldering of a tube horizontally to a band is accomplished by No. 3.

No. 4 allows of two tubes being held parallel to each other and in exact apposition while soldering them. This union is a very useful one in the combination of traction screw and the expansion or contraction arches of the Angle system. This clamp is also useful for holding the

short tube, engaging end of traction screw, at the required angle to cuspid band while uniting. Again, it may be used to solder tubes to bands vertically when necessary.

The most ingenious clamp of the set, No. 5, will hold a pinhead of any desired length, perpendicular to a band, while the union is made with solder, and is readily detached by sliding pinhead out of groove of upper arm of the clamp after soldering. The upper arm of clamp is grooved and bent upon itself, thus allowing the head of a pin to slide into the parallel grooves (which are gauged to tightly hold the ordinary pinhead),



the shank of pin being cut off to the desired length and the neck of the pin filed flat while in the clamp, thus making the soldering easier. The difficulties attendant upon other methods of attaching pinheads to bands are too obvious to mention. The use of this one clamp alone is a constant source of satisfaction, so accurately and quickly does it perform the work required of it.

Being automatic, these clamps require the use of but one hand, the other being free to apply solder or flux, thus adding to the comfort and ease of the operation, doing away entirely with the nerve strain attendant

upon methods in which the steadiness of the hands alone is depended upon to secure fixation while soldering, though I do not mean to be understood as denouncing the beneficial training the hand and eye receive from such practice.

Though appearing delicate, these clamps are efficient, possessing that peculiar temper of steel by which they are not rendered brittle by heating, and can be bent after heating *ad libitum*.

The fine, sharp flame of the Herapath blowpipe is best suited for their use, though they may be used successfully with the Bunsen or even an alcohol flame.

The five clamps, comprising the set, fulfill practically all the needs for making the attachments mentioned above, and while obviating the difficulties usually paramount, possess such advantages as to render their use a distinct addition to the technique of orthodontia.







## **A Suggestion in Shades for Operating Window.**

By C. J. TINKHAM, D.D.S., Crown Point, Ind.

My operating window has a direct south exposure which permits the sun to shine on my chair at some hour during the day throughout the entire year. I found it absolutely necessary to subdue this intense light and to get all that is most desirable out of it. I use six shades: four pure white, one cardinal and one dark green.

Scotch Holland shades were chosen on account of their fine texture, as they will not crack or crease in rolling, and their colors hold better. The shades are hung on "tin barrel" rollers, preferable to the wooden ones, as they are stronger and will not warp.

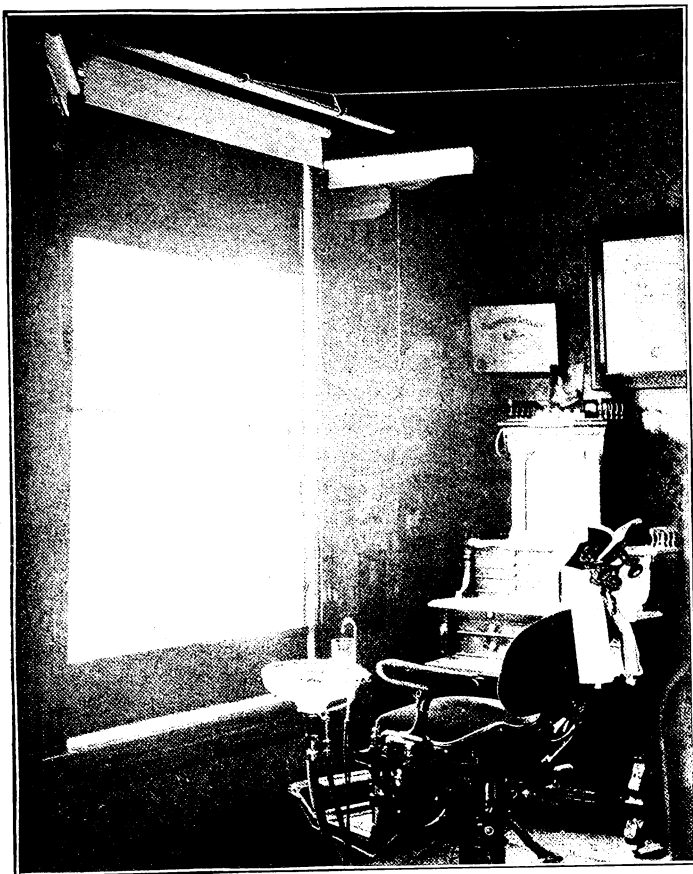
The white shade covering the window is fastened on the outside of the top casing and pulls down the full length of the window, as do the side shades also. These are twenty-four inches wide, and are swung on wooden brackets fastened to the side casing eight inches below the top curtain by strong "T" hinges that permit them to swing at any angle, as well as under shade overhead, and, when not in use, back against the wall.

The white shade overhead pulls out until it covers the same distance from the window as the head-rest on operating chair when tilted back, and is held in place by a cord fastened to hooks at different heights in opposite wall; their use depending upon the desired slope of shade. The roller is set on wooden blocks four inches above the white window shade, and stands out two inches beyond same to permit freedom of both shades in rolling up.

The cardinal shade at the bottom of window sets inside of window frames and is drawn up by a cord passed through a window shade pulley fastened inside of window frame at the top, and locks itself by pulling cord to one side. This shade can be drawn up within three feet of the top of window and its color is called "Scotch Holland red."

The dark green shade sets inside of window frame back of the white shade at the top, and can be drawn full length of window.

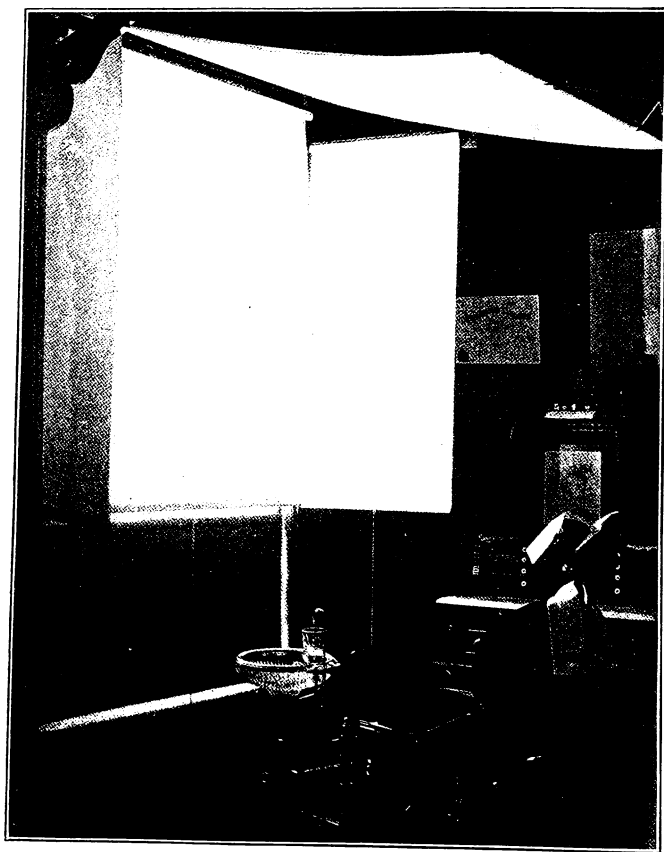
The accompanying photographs are intended more to illustrate how and where the shades are hung (as well as their position when rolled up) than to represent them when in use, as they are drawn into different posi-



tions in operating; depending upon the condition of the light, the position of the chair, and in what part of the mouth one is desirous of having the most light.

For the sake of illustration: If I am operating on the lower teeth, with the sun shining through the window, I draw the red shade up a trifle above the horizontal from the patient's head, for two reasons—first,

to protect my own eyes from that light that is of no value and very trying on the eyes, and, second, to eliminate a reflected shadow seen along the enamel edge of the floor in posterior approximal cavities. (This shade is most essential and should be used constantly on all operating windows.) I then draw the white window shade down so that it



overlaps the red one, and if the sun is shining directly through the window and the light is still too strong, I draw the dark green shade down back of the white one until the light is focused as desired.

These two shades are used in a strong light for which they are admirably adapted, giving a rich mellow light in any volume needed which is very effective for operating, and yet restful to the eyes.

The two side shades and one overhead are used during dark days, reflecting the side light on the chair that otherwise would be lost in the room, which is a waste of a surprising amount of light, as I discovered after using the shades.

Their convenience is apparent, as they can be rolled up and out of the way when not needed, and with the green shade drawn and sash curtains in place, the window presents its normally dressed appearance.

Their value to a dentist is inestimable, no matter what exposure his operating window may have.



# SOCIETY PAPERS

## A Study of Harelip and Cleft Palate.

By THOMAS FILLEBROWN, M.D., D.M.D.

*Read before the Central Dental Society of Northern New Jersey.*

### Statistics of Harelip and Cleft Palate.

Examination of statistics taken from various sources shows that congenital fissure of the lips and palate are much more common than one would be led to suppose from the mention made of them in the current literature of the times.\*

As records are not very full nor readily accessible, no accurate estimate of the occurrence of harelip and cleft palate can be made. In the "St. Thomas's Hospital Reports" the number of malformations of the children born is noted in some of the years. Thus the aggregate number of living children born in their maternity department in the years 1875, 1887, 1880 and 1883 was 10,653, and of this there was only one case of harelip, with two cases of cleft palate and three of the combined deformity, i. e., about one case in every 1,800 infants born; but if the silence of the reports for subsequent years means absence of deformity, then this proportion may be much too great.

No mention of harelip is made by Hippocrates, Galen or any of the fathers of medicine. The name appears to be first used by Ambrose Paré, who probably initiated the treatment by pin and figure of 8 suture. Harelip is really a misnomer, as the condition does not simulate a hare's lip except in the fact of being cleft, for the natural cleft in the animal's lip is always in the median line below, bifurcating above to reach either nostril, whereas in the abnormal human lip the cleft lies in one or the other side.

The deformity of harelip differs greatly in extent. It may appear as only a slight indication of a notch in the red border of the upper lip, or

\* I am principally indebted to Rose, of London, for statistics.—"Harelip and Cleft Palate."

may involve the wide separation of the whole lip including the floor of the nose. This last condition is likely to obtain when cleft of the alveolus is combined with the harelip.

Harelip seems to occur more in boys than girls. According to Müller, out of 270 cases, 170 were boys and 100 girls.

Unilateral harelip is more commonly met with on the left side than on the right; probably 60 to 70 per cent of the cases were left sided. Thus Müller reports 142 left-sided cases against 62 right-sided clefts; Mason, out of 65 cases found 54 to be unilateral, and of these 35 left-sided to 19 on the right; Köliker mentions that in 165 unilateral clefts 113 were on the left side, and 52 on the right. At present no satisfactory explanation of this preponderance of left-sided clefts has been given.

In Continental Europe some old records are obtainable. Thus, according to Grenser, of 14,466 infants born living at the maternity at Dresden from 1816 to 1864 there were sixteen cases of simple harelip and nine with fissures of the palate. Credé states that amongst 2,044 infants examined at birth, only one case of simple harelip was observed, and one of complete division of the hard and soft palate.

There is as much variety in the extent of the deformity of cleft palate as there is of harelip. The alveolus may alone be cleft or the uvula alone be divided, or only a small opening be left at the junction of the hard and soft palate. In extreme cases the lip, alveolus and palate are all divided, making one continuous opening from lip to uvula.

The width of the cleft in the palate varies as much as the extent and is a matter of great importance prognostically, as the broader clefts are much more difficult to close. The direction or slope of the segments of the bony palate also differs considerably, in some instances being more or less horizontal and following the normal curve; in others one or both of the segments are much more nearly vertical, a condition that is not at all unsatisfactory, for the more horizontal the palatal processes, the more difficult it is to gain satisfactory closure by operation.

Cleft palate occurs also in animals, particularly in those born in a state of captivity. Thus it appears that from statistics taken in 1880, 99 per cent of the lion cubs born in the London Zoological Gardens had cleft palates, indicating that either the food supply of these animals was not all that was requisite for perfect development, or that enforced confinement has a deleterious effect upon the multiplication of the species. It is a curious fact that in the Dublin Zoological Gardens the deformity was rarely noticed amongst the lion cubs, and the reason for this was supposed to be the supply of such food that the mother could eat both

flesh and bone. Since the same practice has been followed in London, viz., giving the lions twice a week a young goat which they can eat, bones and all, the proportion of cleft palates in the young subsequently born has become considerably diminished.

The operation for closing congenital cleft of the soft palate was conceived and first performed in 1760 by La Monier, a dentist. Stimulated by his example, many surgeons performed the operation with varying success and many improvements in

the method of doing it.

In 1816 Prof. Graefe performed staphylorrhaphy—also Roux, in 1819. Roux published a detailed description of his method, which was much the same as Graefe's. M. Krimer, 1824, is the first known to attempt the closing of the cleft of the hard palate.

In 1843 Dr. Mason Warren published a method which promised good success. He dissected the flaps from above downward and sutured the upper edges together; then cut the posterior pillar of the soft palate to relieve the tension.

Dr. Warren did over 200 cases with very fair surgical success. The physiological results were not sufficiently encouraging to establish the value of the operation and consequently it became discredited and generally abandoned.

Langenbeck's method, which he introduced about forty years ago, was generally adopted and quite superseded all the methods previously suggested. He made an incision near the teeth extending from a little back of the last molar tooth to a point anterior to the apex of the cleft in the palate and then freeing the whole of the flaps, including the periosteum from the bone, and after paring the upper edges of the flaps uniting them in the middle line. The advent of anesthesia and the better understanding of the importance of cleanliness caused renewed attention to be given to it, so that during the past twenty years the operation has again grown in favor and many still greater improvements in methods have made the physiological success much more satisfactory.

The physiology of speech in cases of cleft palate is a very interesting and important subject, but the limit of this paper will not admit of its discussion at this time.

The case illustrated by the following cuts shows what can be accomplished by careful, judicious application of well-known principles of surgery. The patient was a lad of eight years, who was born with a large left unilateral fissure of the palate and lip. The fissure in the lip was closed in early infancy and with very creditable results.

**A Case  
from Practice.**

Abundant length of lip was secured, but the consequent narrowing was very marked. The form of the nostril was as good as is generally obtained. The thinness of the lip on the left side was very pronounced. The red border was very irregular. Under the nose was a very large



Fig. 1.

keloid cicatrix. The lip was very narrow, which made motion impossible and caused the under lip to protrude to a disagreeable extent and show great prominence.

Fig. 1 is from a drawing made by an artist, Mr. E. B. Torrey, from life before the operation. The dark shading on the lip shows the position



and extent of the red border. The shading under the nose shows the position and extent of the cicatricial prominence.

Fig. 2 is from a drawing showing the incisions which were made to accomplish the metamorphosis, the accomplishment of which required

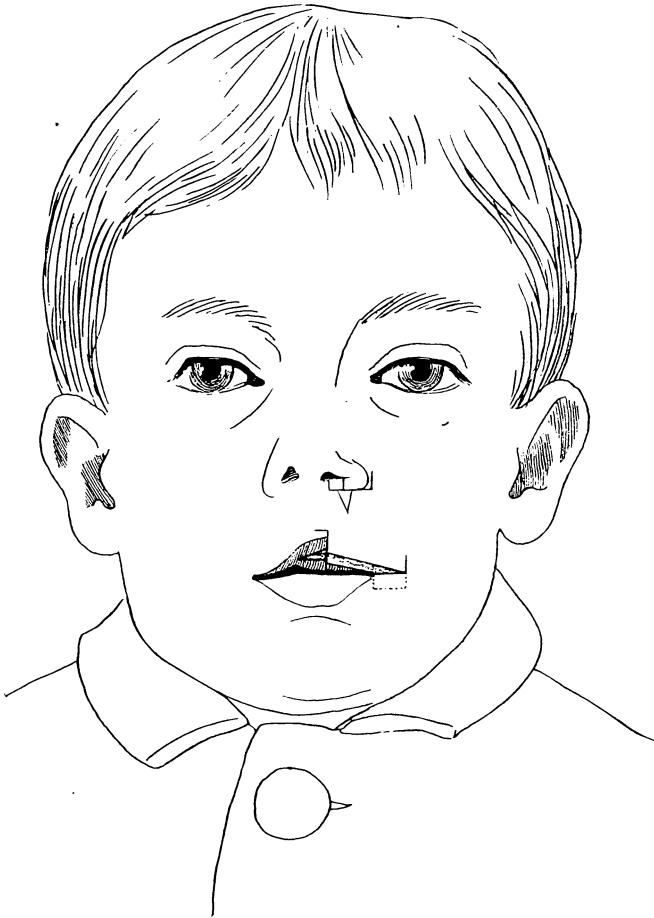


Fig. 2.

two operations. The lines show the incisions made and the dark shading shows the tissue removed.

The edges of the incisions were all closely approximated by fine silk sutures, except the point back of the ala of the left nostril, which was filled by granulations.

The lip was widened on the left side by extending an incision from the angle of the mouth laterally into the cheek five-eighths of an inch, the amount needed to widen the lip, but not quite through, leaving the mucous membrane intact. The mucous membrane was dissected off a sufficient width to fold over the edge and form a red border and incised parallel with the first cut. This is shown by the dotted lines. A narrow strip of the white skin was removed above the incision to provide for a rounding up of the prepared red border as nature provided on the right side. The flap of mucous membrane was drawn up and carefully sutured to the fresh edge of the skin.

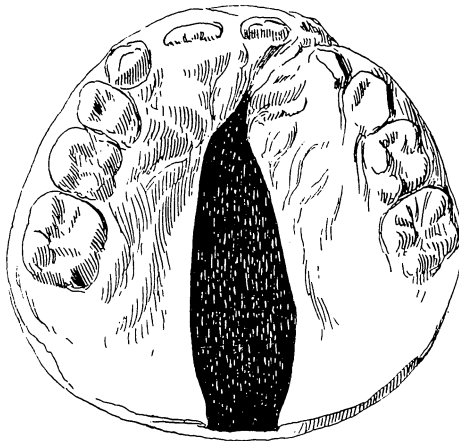


Fig. 3.

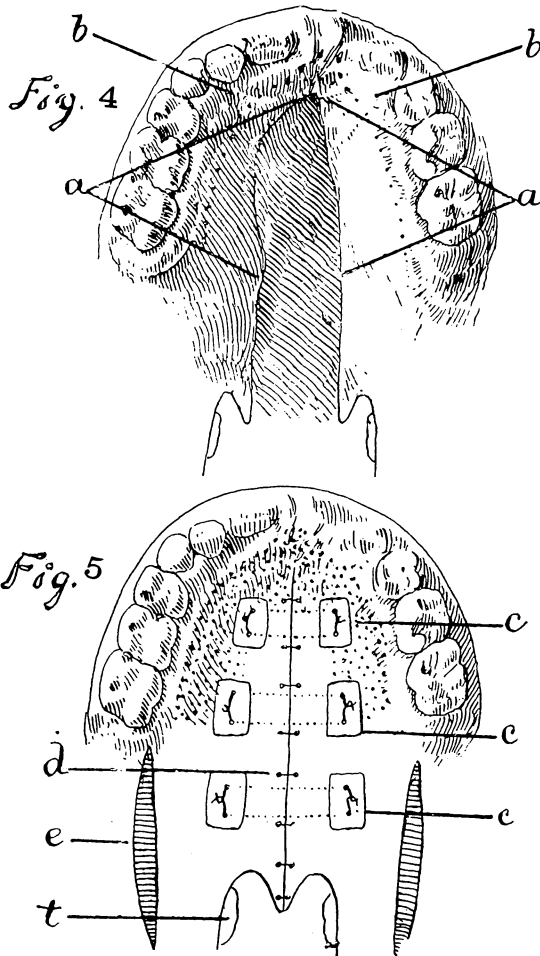
Next a vertical incision was made *through* the cheek upward, at the outer extremity of the previous incision, one-half the length of the first cut. This, when straightened out, just equaled the fresh surface below and carried all of the newly prepared red border into the lip and made the width of the upper lip quite equal to the under, and removed entirely the pouting of the under lip, which before was so marked.

A slight fault in the orbicularis oris muscle was the only undesirable feature resulting from the proceeding, which, of course, was unavoidable. Time has in a large degree remedied this, so that at present it is but little noticeable.

The other incisions are as fully described by the figure as they can be by verbal explanation.

Fig. 3 is a reproduction of a model of the same patient's mouth previous to operation for cleft palate.

Figs. 4 and 5 are reproductions of cuts published in the *Boston Medical and Surgical Journal* of February 3, 1898, showing how the operation for closing the cleft was performed.



"I commenced my incisions at a, a, Fig. 4, and with a hoe-shaped periosteum knife dissected off the tissue from the hard palate to the dotted lines, b, b, Fig. 4. After paring the edges of the flaps I inserted silver sutures running above the flaps and passed them through the palate and through pure silver disks c, c, c, Fig. 5, twisting the ends and

making tension which fully approximated the edges. To fully relieve the strain upon the soft palate, and also to allow contraction of the arch, I made the incision e, Fig. 5, from the tuberosity to opposite the under molar. I cut through the mucous membrane with a scalpel but not deep enough to injure the tensor muscles, and then separated the deeper tissues with a smooth dissector, in order to avoid injuring important vessels.

The edges of the cleft now held in close approximation were brought more accurately together by fine silk sutures d, as shown in Fig. 5. I



Fig. 6.

thus avoided the lateral incision in the hard plate, the separating of the tensor muscles, the cutting of the pillars of the fauces, and approximated the tonsils so as to lessen the arch and allow the soft palate to retract to a considerable extent.

"Should I find it necessary in any case to further widen the flaps at the junction of the hard and soft palate, I should make two or more buttonhole incisions opposite the tuberosity."

Fig. 6 shows the face of the lad six months after undergoing the various operations necessary to make the several improvements.

## Practical Hints to Porcelain Workers.

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By W. A. CAPON, D.D.S., Philadelphia, Pa.

*Read before the Massachusetts Dental Society, June, 1900.*

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Porcelain fillings, inlays or sections form a part of dentistry distinctly its own and in no way antagonizing the other achievements of operative work, for all practicing dentists have cases where teeth are only saved by continually patching and refilling with cement or gutta-percha, a mere postponement of the evil day when the tooth will need to be devitalized and crowned. In cases such as mentioned a knowledge of porcelain fillings, and the means of making them, might have saved the teeth and probably the reputations of the dentists. Not only is this work distinct, because it fills a long desired want, but its character is decidedly different from other work, and must be treated with caution and conservatism. Added to this, one must have a good bump of location and a natural tendency for shading and manipulative dexterity. One fortunate in having these combinations, or a portion of them, and the perseverance to acquire the rest, can be safe in feeling that practice will make him a porcelain worker, or, a preferable term in my estimation, an art dentist.

Of course we all know that a man or woman may be an artistic dentist in many other ways, in the laboratory as well as in the operating room, but the most artistic gold filling must be secondary to a well adapted, correctly shaded and properly contoured porcelain filling. The former requires close and continued application over a tied-up and, in many cases, nervous patient, while the picture of the latter is much more pleasant to behold and decidedly more acceptable to the patient, and the result must be artistic because you have not only restored the original form, but the shade also, and approximated the texture of the tooth.

I have advised caution and conservatism because experience has taught me their value, and such practice will insure reasonable success. There is a certain fascination about this work which will lead to trouble if you are not well guarded.

I know dozens of dentists who in the last few years have taken up porcelain work, and after a little while given it up, completely disgusted, convinced that there is nothing in it, and who express surprise that I am still an adherent and meet with success. Some of these men I have put on the right track, while others were content to leave it alone.

**Situations  
Suitable for  
Porcelain.**

To have you understand more readily what I consider safe practice, I will, for your guidance, divide the cavities in three grades, and call them "suitable," "doubtful," and "to be avoided." To be more explicit, I will show at the conclusion of this paper a few sketches of teeth and their cavities in the order named. Among the most suitable places for porcelain inlays, fillings or sections, I will name the cervical margins on the labial and buccal surfaces of all teeth, from bicuspid to bicuspid, upper and lower, but particularly the upper, approximal cavities, corner and cross sections of the oral teeth



Fig. 1.



Fig. 2.

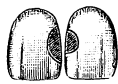


Fig. 3.



Fig. 4.



Fig. 5.



Fig. 6.



Fig. 7.



Fig. 8.



Fig. 9.



Fig. 10.



Fig. 11.



Fig. 12.



Fig. 13.



Fig. 14.

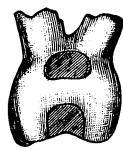


Fig. 15.

(Figs. 1, 2, 3, 4, 5, 6, 7). Under the second head, or "doubtful," place approximal pin-head cavities, approximal margins and distal approximal surface of bicuspid (Figs. 8, 9, 10). In the last class those "to be avoided," place all molar cavities, the coronal surfaces of bicuspid, very small corners on incisors, also abraded edges of the same teeth (Figs. 11, 12, 13).

There is one exception in the last list that can be safely placed among those of the best, and that is the mesial approximal surface of the first molar, simple or compound cavity, where space has been made by

the loss of second bicuspid (Fig. 14, 15), this allowing good access for impression and withdrawal of matrix. The cavities in the preferred list are all accessible or can be made so by separation. The second class may be reduced by the dexterity and experience of the operator if so desired, but as a rule pin-hole fillings are difficult to handle, and not much is gained by using porcelain in them; but of course in this work, as in all other, you must be governed by circumstances. Those in the last class are so placed because of the impossibility of getting good impressions, and the great pressure brought to bear on a little brittle substance on the grinding surfaces of molars and bicuspids.

The preparation of a cavity for the reception of  
**Preparation**            porcelain is similar to that of cavities intended for  
**of Cavities.**            gold or plastic work, except as to the edges, which  
                                  must be made square to allow of a better joint. A  
 slight undercut is all that is necessary; otherwise the impression cannot be withdrawn freely; increase the undercut if so desired, after the filling is made. Plenty of space is imperative if filling between the teeth, for, unlike other fillings, they are finished before inserting, and being of a brittle, unyielding substance, there is danger of breaking if forced where the space is insufficient.

The use of a Perry or Ivory separator will assist very materially in many instances. The platinum foil must be thoroughly annealed in the furnace, and will resemble ordinary tin foil that you are all familiar with. The metal is gently forced into the cavity with a small rubber tip, and then use an amalgam burnisher to make the adaptation more perfect. The uninitiated are always dismayed at the hole that is invariably made through the foil, but that cannot be helped and is no objection.

The most important part of the whole procedure is the second burnishing after the first baking. It is then that the edges are forced into place and the true fit is determined. Carelessness, or an oversight at this time will likely prove disastrous to the filling; therefore, I must impress upon you the importance of the second burnishing. When the filling is finished, remove the platinum and cut a groove on at least two sides with a rubber-corundum or diamond disk and cement in position. You may have perfect shade and excellent joints, but the cement may spoil it all, especially those thin margin inlays where shade is the great requisite. Try to use a shade of cement as near the tooth color as possible and mix thin, otherwise it may pack and keep the filling from going in place. If this should occur, withdraw it quickly and commence again. When set, dry with hot air and cover with paraffin, rubber or sandarac varnish. Leave the dressing of the edges till thoroughly hardened, and after a time you will be pleased with the apparent blending of the

shade in the tooth and filling that was temporarily changed at the time of operation.

It will be noticed that my directions pertain to the use of platinum foil as a matrix and the use of high fusing porcelain body, because my experience, covering a period of over ten years, has proven to me, under all circumstances, that this is the most satisfactory. It is the original method, therefore has the advantage of many years' thorough trial since the time when a favorable criticism was nearly always accompanied with a shake of the head.

Platinum foil has advantages over gold because it is tougher and can stand any heat required without change of form, and as a mold for low fusing body, it is quite equal to gold in every respect.

Many of you are probably better acquainted with a newer method of making inlays, as practiced by Dr. Jenkins, of Dresden. It consists of taking an impression of the cavity with gold foil, investing the mold and fusing with a very low fusing porcelain, which of course must be less than the melting point of gold. Most beautiful work is done in this manner, but no better than by the other method, with the advantage in favor of the latter, because not so much care is required in the preparation of cavities, no investment is necessary, and, as heretofore stated, the platinum is more rigid and practically non-fusible.

There is no question pertaining to this class of work that is discussed more frequently than that of a high or low fusing porcelain.

Years ago we had very little choice, and now that I have tested all kinds, I am a firmer believer than ever that high fusing is the most satisfactory for general work. In many instances low grade will do the work just as well, such as simple cavities on labial surfaces, but when it comes to large contours and sections, I draw the line sharply in favor of high grade material. There is a medium body which I have tested thoroughly, and do not hesitate to recommend; that is an English body and called by the manufacturer high fusing, but as we gauge this material, it is in reality medium. However, I find that all English bodies exhibit great shrinkage; otherwise their shade and texture are excellent.

Many of you who are putting in porcelain inlays and building up teeth in that manner are quite content to stay on that line. To those who desire to go further, you will find a field quite as fascinating and the results equally gratifying. I allude to the many ways of crowning teeth that this class of work offers. The porcelain faced or jacket crown can be used on any tooth in the mouth, pulp alive or dead as the

**Platinum  
Matrix.**

**High and Low  
Fusing Bodies.**

**Porcelain  
Crown Work.**



case may be; covering malformed teeth or filling unnatural spaces, and for durability and quick repair are unsurpassed.

Another much discussed question is that pertaining to appliances for fusing porcelain. For large work and quantities, the old coke furnace is still used and is most efficient for purity of material. But one of the requisites for our work is quick and high heat. The first of such furnaces was made by Dr. C. H. Land in 1884, and is still unsurpassed for rapid and reliable work. Afterward came Parker, Fletcher, Sharp, Downie, Ash, and others, all different in form, but on the same heating principle. The main objection to gas as a fuel is the care required to prevent gassing and the noise of combustion. Using a seamless platinum muffle entirely overcomes the first of these troubles.

Custer and McBriar blazed the way for electricity by introducing their respective furnaces, until now there is a great variety of that kind, but as to the merit there is not much difference. The avoidance of possible gassing is a considerable feature, but that point is counterbalanced by the great trouble given when the wires burn out, which frequently occurs and is impossible to obviate entirely.

The nearest approach to a quick repair electric furnace is that which is made by Dr. Timme, of Berlin, and only recently placed on the American market. The wire is imbedded in sections of fire clay, so that that portion immediately affected is removed and replaced without much delay, or impairing of the whole furnace.

There is another furnace entirely different from any other, and that is one called the "Revelation," also an invention of Dr. Land, of more recent date. Its fuel is refined petroleum, and it is so constructed that a direct chimney draught is sufficient to produce a very fierce heat. It is well named, for it is most ingenious and its baking is of the purest order.

Some importance may be attached to these few general remarks I have made about furnaces, because you will argue that as an exponent of this work I must necessarily know what appliances will give the best results. I reply by saying that I have endeavored to keep posted, but when there is such a variety and the results almost equal, one must be governed by circumstances, for what may suit me would not apply to you; therefore, I will leave that part of my paper open for discussion at the proper time.

## Our Professional Career.

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By DR. R. C. BREWSTER, Brooklyn, N. Y.

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*Read before the N. Y. Alumni Association, Psi Omega Dental Fraternity,  
Brooklyn, N. Y., April 26, 1901.*

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In addressing the Psi Omega Dental Fraternity, the subject of my discourse must, necessarily, be on matters relating to our profession. All the departments of this voluminous subject are worn about threadbare, and the only topic I can choose is the one that lies uppermost in my thought, viz.: the preparation or fitting of a young man for the practice of dentistry, with credit to himself and benefit to the community, commonly called dental education, with some reference to the character of his life work, which is largely the result of that education.

Of this subject of dental education you, no doubt, have heard much, but as this is the watchword of the day, we must guard and foster it with our utmost care, and the very mention of it should call forth our closest attention.

The first time it made an impression upon you was when you were considering the possibility of entering this profession, which resulted in your going to a dental college, and in coming in contact with the Board of Regents. But now, having passed through all that, you dismiss the subject from your minds, buckle on your armor and get down to work with strong hearts and willing hands.

But occasionally your minds will revert to the subject in spite of you, particularly if some young man who is casting about to find a vocation asks you about the experience you have gone through, and whether in the light of such experience you think it worth the while to expend all the time, money and energy it has cost you; then it comes up to you in an entirely different light. You feel a certain stability in your position in the profession that could not have been attained without the long years of patient toil that you have been through, and are thankful for the guiding influences that have brought you to your present honored position, in which you feel competent to sustain yourself.

Then, too, you are conscious of the advantages you have had over those who entered the profession fifty years ago. To the older men also, who have borne the burden and heat of the day, the subject is not devoid of interest.

In looking over the history of our profession we see all along down the line, the names of some men who were prominent during their day and generation. It is by nature of their untiring effort that the chaotic conditions of fifty years ago, which surrounded the methods of dental education, have, by a series of gradual evolution, developed into the present efficient means of preparing a dental student for his life work.

It was not until the year 1839 that the first dental journal was published, the *American Journal of Dental Science*, and that antedated the first dental college and the first dental association in the world by about one year.

From what source then did these pioneers derive their dental education, these men of sterling worth, hard thinkers, hard workers, having only their good judgment and their especial fitness to guide them?

Were not their operations necessarily restricted to a narrow scope as compared with the graduates of today whose education has fitted them for almost any operation in the mouth, whether it be on the teeth or the care of any surgical case?

Let it be said to their credit, however, that such work as they did would not suffer by comparison with the work of these later years.

If, then, with such limited advantages, these men were able to carve their names in tablets of stone, indelible against the ravages of time, what must be expected of you who have fallen heir to all their experiences, and have been taught only those things that will lead to success?

Upon you, then, rests the responsibility of the future welfare of the profession, at this the beginning of the twentieth century? It is an inheritance that has been handed down to you, and an obligation from which you cannot shrink, not only to preserve it in its present honorable position, but to press onward to a still higher plane of perfection.

There are yet many avenues unexplored, and just as many doors standing open for us as there were to those of bygone ages. All knowledge has not been attained, nor a perfect technique in our daily operations. Longfellow caught the inspiration of this sentiment when he wrote the following verse:

"The heights by great men reached and kept  
Were not attained by sudden flight;  
But they, while their companions slept,  
Were toiling upward in the night."

I am often asked if early home education and environment has not much to do with an elevated or prominent position in our ranks. To

which I answer, to some extent, yes; but personal fitness with a strong, indomitable will counts for more. There are men whose natural endowments seem to fit them for some especial career, and bring them to eminence and distinction without the tuition and early advantages required by others.

Each one of us is endowed with a certain amount of vital energy, forensic force and power of application, and if this be directed continually in one direction, the result will be eminence and distinction in that line of work. But let that given amount of energy be divided into different channels, or the power of application diminished, the attainments in each of these channels will fall short of greatness according to the number of channels into which the energy shall have been directed.

Who so taught George Washington the art of war, that all the trained forces of Great Britain could not conquer him, though he had but a small army of ill-fed and poorly equipped men?

Who taught John Paul Jones to be a naval commander, who could worry the life out of the English navy, and finally capture the best equipped vessels England could send against him?

These were strong men, mentally and physically, whose determination of purpose saw nothing but victory. Of all the advantages that may come to a dentist, there are none that exert so great an influence as to be blessed with a strong constitution and good health.

**Importance of  
Good Health.**

Take, for instance, two men of the same age, of equal early advantages, of equal mental ability and equal attainments. Let one represent a perfect type of vigorous health and vital force, and be registered in an imaginary scale for fixing the degree of health, at the maximum rate of one hundred degrees. Let the other whose physical condition is not so good, be registered at seventy-five degrees.

The first will carry conviction in everything he says, and accomplish with ease everything he does, with little expenditure of vital force. He will neither hurry nor worry. The other, by reason of less vital force, expends greater energy to accomplish the same things in a given hour, and has less vital force to start upon the second hour's work. Continuing this ratio year after year, the first will stand so far in advance after a few years that there will no longer seem to be any comparison between the two men.

Any departure from health is expressed by an impairment of some of the functions of some of the vital organs of the body; the brain, heart, lungs, stomach, liver or kidneys, and with this impairment comes the possibility, and I might even say probability of the warping of a man's judgment at a critical moment, from the effects of which it might take

years, if ever, to outlive. Whereas, the clear brain of a strong, healthy man would score a point where the other man had failed.

Fatigue is a departure from health, and when a man has stood at his operating chair from early morning continuously until late in the afternoon, he is not in as good condition to withstand the vexations and annoyances as he was during the morning hours. In the morning the arrogance of the rich, the four hundred, the hauteur of the divinely æsthetic maidens and snobs, and the peevishness of children, invalids and cranks, make no perceptible effect upon the nerve power. But in the afternoon, when the power of resistance is lower, it seems almost human nature to resent such deportment from patients when the operator is doing his level best.

It is here that the strong man who never becomes tired, makes his greatest score. The suave manner of meeting and repelling the insolent deportment of these people should be part of our education.

As a result of my experience in this direction, I always require of new patients an appointment during the morning hours when I am at my best, until I am familiar with their deportment in the dental chair.

With all the gifts, endowments, social advantages and attainments that may come to a young dentist, the fact remains that unless he uses them with great diligence, he never will succeed in building up a practice. But, if by the necessary effort he does succeed, it requires eternal vigilance to keep it.

There is a faculty with which some men are endowed that seems almost to take precedence over his ability as an operator, that gives him a prestige among his fellow men, and that is, personal magnetism. This rare attribute, coupled as it usually is with power of speech, is one of the fairest gifts with which man can be endowed. With it he has the power of attracting people, and from among them to add to his clientele. With it he has the power of controlling many patients while undergoing painful operations almost to the extent of hypnotism. By those to whom this power of attracting persons has not been given, much can be acquired by inculcating the habit of pleasing manners.

We hear a great deal of the word success as applied to the career of dentists. But what does success mean? Ordinarily speaking, especially by the laity, it seems to imply accumulation of wealth or worldly goods. While a certain amount of money is undoubtedly necessary for our maintenance and support, still, from a professional standpoint, it seems to me to be about as low a standard by which to measure the attainments of a man as can well be imagined.

That the successful application of the principles and methods that

are taught in the course of our instruction, are not within the grasp of some of our graduates, I am willing to admit, but to those who catch the inspiration, an increasing patronage is sure to follow.

When a practice has been attained that fills all your time, as a result from faithful adherence to honest professional work, with an effort to elevate the standard of our profession and an allegiance to your Alma Mater, then you will have secured a clientage that will enable you to be spoken of as a successful dentist.

But he whose only ambition is the accumulation of money through his daily practice, in open violation to codes of ethics, written or unwritten, casting aside his Alma Mater and reducing his practice to a mercantile method of transacting business, I care not how colossal his fortune may become, he will go down "unhonored, unknelt and un-sung," and his name will find no place in the history of our profession.

Besides the advantages derived by dental legislation, and those that accrue from good health in the general acceptance of the term, without the hair-splitting argument of what the standard of perfect health is by which all men can be measured, there is still another standard of excellence with which you must comply if you would remain in the ranks of our profession, and that is the living of a life of strict morality and integrity. Nothing will tend so greatly to elevate one's standing in the community, as to be known as an honorable man of uprightness and integrity, and nothing will drive a man to the wall sooner than for the community to know he does not possess these attributes.

**The Question  
of Finance.**

But when a man shall have attained a clientele that enables him to lay up a little money, or make a small investment from time to time, the desire for large returns frequently leads him to place his savings where risks are great. It is far better to make a safe investment with small interest unless you can afford to lose it all, than to run the risk of landing on "shoals and misery."

In contemplating this financial question, which is to most of us of so great importance, there are a few facts known as common law that should not be overlooked.

Nowhere on earth is wealth, property and personal belongings so well safeguarded as in New York City. The laws of the community are so well formed and so well enforced that the rights of individuals are secure. All the wealth, property, personal and real, however, are simply controlled by the owner, no one owning anything; they simply have the control of it. In everything any one owns his ownership is limited. He owns it to a limited degree by suffrage of the community. For all that we own is,

in part a component part of that which helps to make up the community or commonwealth.

As a proof of this there is nothing we possess that cannot be taken from us by the community, when it is demanded for the benefit of the public at large, or by reason of our holding it to the danger or detriment of the community, even to our personal liberty.

The ability to amass and control a fortune is one of the rarest talents that falls to the lot of man. I have known quite a number of dentists who had passed the meridian of life, to launch into an enterprise with the savings of a lifetime, with the hope of securing a competency that would keep them in their declining years, and lose it all.

We, as dentists, should inculcate the habit of saving, and not only live within our income, but lay aside something every year, no matter how little. This, every capitalist will tell you, is the principle or foundation upon which all large fortunes were built.

But he who fails to live up to these precepts may look back over his career, when the wheels of time have carried him into the "sere and yellow leaf," and meditate upon the neglected opportunities of a lifetime, and they will seem like mocking mermaids on a shipwrecked shore.

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### **Tin Foil Fillings.**

By FRANKLIN BERNARD, D.D.S., Kenneth Square, Pa.

*Read before the Chester and Delaware County Dental Society, at West Chester, Pa., October 31, 1900.*

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What dentist of the present day employs tin foil regularly in his practice. Echo answer! Yet it is one of the best materials at our command. It possesses inherent qualities which make it the ideal filling for a certain class of cavities.

Some of the old boys can remember the time when it was extensively employed by men like Drs. McClellan, Green, Thompson and others, whose operations stood the crucial services. Why then has it fallen into disuse? Is it because its proper insertion requires skill of too high order? Is it because the dentists of the present day have grown indolent and seek their own ease more than they do the highest good of their patients? Either of these reasons would not be very creditable to us

as a body, and yet, no other that seems sufficient, readily presents itself to the mind.

The use of tin foil is not usually taught in our schools, or at least it is not given the attention which of right belongs to it. It is easy to putty up a cavity with a plastic filling. Amalgam has been made to take the place of tin and yet when properly inserted in a cavity to which it is adapted tin is infinitely superior.

All plastic fillings which depend for their hardness upon crystallization, subsequent to their insertion are liable to the changes in form which that process necessarily entails; expansion follows. When water crystallizes into ice there is a decided expansion.

Tin when thoroughly condensed has nearly the wearing qualities of gold. A bar of pure tin has almost the impenetrability of the nobler metal. It can be worked very quickly, and a quantity of moisture is not as fatal as to a gold filling. It is peculiarly congenial to tooth tissue, and seems at times to exercise a decided therapeutic influence upon it.

There would seem to be no reason why dentists who are seeking for the best results should not employ it largely, unless it is that they are ignorant of its merits or of the best methods of working it.

The average gold worker when he attempts to use tin foil seeks to employ the same kind of manipulation with it as with gold foil, but the characteristics of the two metals are widely at variance. Gold can be made to cohere one part with another and may be actually welded to it. This is not the case with tin. It does not weld, and the most that can be done in consolidating it is to so intermingle the surfaces of the two pieces that they seem practically to be one.

A pellet of thin gold foil can be laid upon a bar of the same metal and by the impact of a smooth instrument united to it. Not so with tin. Under like circumstances it would be found necessary to use a sharp pointed instrument, and by a succession of indentations to drive the particles of the one piece into the other. Hence the impact of a mallet is out of place in consolidating the two.

It is impossible to add pellet to pellet and by hammering with a mallet to build up a filling as with gold.

The best way to insert tin is to use it in the form of cylinders following the methods of the old operation for using soft gold.

In the early days dentists were unacquainted with the welding properties of gold foil and depended upon wedging it in. That is precisely the manipulation proper for tin foil, which has the qualities that gold was formerly thought to possess.

Cylinders of different sizes should be prepared by rolling strips of



folded tin foil about a smooth wire. These are then placed on end in the cavity to be filled, and pressed laterally toward the periphery, the end being allowed to project. Another cylinder is added and pressed towards the margins and this process is continued until the walls are completely lined by the cylinders. More are added in the center until the cavity is filled, then with a sharp pointed excavator or a plugger of analogous shape the surface is examined to see if there be any imperfections. If there are, the instrument is worked down into the filling, lateral pressure being almost exclusively used. When the hole is sufficient, another small cylinder is inserted and this is continued until the instrument can no longer be worked into the fillings. Then commences the consolidation of it by means of serrated condensers. For the first time pressure nearly in the direction of the axis of the tooth is employed. Heretofore all pressure has been lateral. By hand pressure the surface is gradually condensed, the projecting cylinders forming the surplus material until a dense filling is the result.

It must be understood that nothing save the ends of cylinders are presented. In no case should the tin be arranged in layers for they are likely to flake off. If there is a deficiency of material at any point more tin should be added by working a hole into which another cylinder may be inserted with a projecting end which subsequently can be condensed. The mallet should not be used because under its blows the tin is laterally chopped out. If a filling inserted in this manner be ground down upon its surface with a corundum wheel, its density and impenetrability will surprise many dentists.

Of course the class of cavities to which tin is best adapted are those approximae surfaces which may be filled with tin by so arranging the cylinders that their ends shall be presented wherever the filling is exposed; also compound cavities with four walls, etc.

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### President's Address.

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By DR. F. EDSALL RILEY, Newark, N. J.

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*Read before the New Jersey State Dental Society, July, 1901.*

In welcoming you to this our thirty-first annual convention, and urging you to make yourselves at home, I assure you it is with some fear and trembling that I venture to read what I have prepared, and will ask you to accept as the President's Address,

The closing session of 1900 found this society in a truly enviable condition, having had at that convention a larger attendance, a greater exhibit, a list of more interesting essays, and an afternoon of better clinics than at any previous one in its history. It was in all respects the greatest convention, not only of the N. J. S. D. S., but of the century, and as such it handed down to us, upon whom the responsibility for the following year devolved, the necessity of immediately setting to work and of doing our very best.

The printed programme shows the result of our efforts. We trust it will have your approval, and be regarded as worthy to mark the doings of our first convention of the new century. Not merely to outdo our predecessors in office, but rather to fulfil the high expectations called forth by their success, and to keep our society moving forward abreast of, and if possible a little in advance of its colleagues in the work—this has been our aim.

We point first of all, and with justifiable pride, to the revised statute secured by our Committee on Legislation, which gives us a law second to none, by which we may protect not only ourselves, but the society as well, and by which also a free interchange of license is secured. It also makes our Examining Board more a part of the society than heretofore, and now with a prosecutor for each county, appointed during the fiscal year, they seem to have taken on new life, with a renewed hope of the realization of the result of their years of labor. I fear we do not fully appreciate our Examining Board, the time and attention they give, the work accomplished toward the advancement of our profession each year by them collectively and individually.

Some new convention features have been introduced, which we trust will receive your approval and be found to possess the character of improvements. You will note the button received at the desk of registration, intended to give us better control of the public, and therefore more orderly sessions; the printed copies of the essays for distribution, which will be the order for essays throughout the entire convention, adopted in order that you with your eyes may read what would be drowned from your hearing now and then by the roar of the ocean and other noises of the outside world; and the new platform arrangements for the clinics, which we sincerely hope will widen the scope of their interest, as well as prevent the crowding of the operator. All these are but experiments, which we are confident will be improved upon by our successors, for it would be an unusual state of affairs if no weak places were discovered in our work by those who assume the burden which we lay down.

With all due respect to the honored past of our society, and without malice or thought of censure toward any, it is but just and right to say

that some weaknesses do stand out boldly, and some mistakes have been made which, if not corrected, will, I fear, cause serious trouble. Prominently among them is the lack of general forethought in choosing the officers of our society; we confine the principal offices too much to one locality. While it is true a large percentage of our membership does come from one section, would it not widen the scope of interest if a little more consideration were given to the selection, that thereby the work might be spread more generally over the State, and not have the higher offices filled by men from the same location in succeeding years? I do not intend in any way to refer to the secretary or treasurer, for it is well known in society work that the interests are best served by permanent officials in those positions, especially so when those offices are filled by men such as it is our good fortune to have. I believe, and I want to be put on record as one of those who believe that there would be no N. J. S. D. S. without a Meeker.

Again, I believe every member should constitute himself a committee of one, and putting aside so-called professional jealousy when he considers a neighboring brother exceptionally proficient in any one branch of our chosen profession, he should invite him to demonstrate it at our convention that we might not only be personally benefited thereby, but our society advanced. And, on the same principle, if he is of desirable material, we should use our persuasion to make him one of us; I say persuasion, and I mean it, for while I am a Mason and believe in Masonic principles for Masonry, for dentistry I believe that in unity there is strength, and that we should wipe out the idea that exists on the outside that we desire to be exclusive rather than fraternal. You have in your community good men, whose only fear is your opposition, which can be obliterated by one word from you. It is only by hearty co-operation that we can accomplish the most good to the greatest number.

A society is what its members make it, the work it accomplishes and the good it will do depends largely on individual effort. Do not think you are not needed, for at the finish the society will fall short just so much of what it should be had you done your duty, and above everything, attend the sessions, for any one who undertakes to write a paper likes to present it to a large and appreciative audience, and it is but courtesy on the part of those who invite him to give him the presence and attention of all. After all, we are but creatures of habit; we come to Asbury and stay away from the meetings, on the hotel veranda or elsewhere, and we like it. We come to the sessions and we love it, and are always on hand, ready to avail ourselves of every opportunity to grasp that which is good; that which will aid us in our business, and will make us better and more capable men in all the walks of life. So let us each do our duty as we see it.

In closing I want to thank the chairman of each and every committee for the gallant work he has done, and for the loyal support he has given me, for I believe we are opening the greatest dental convention of the age, and, gentlemen, while on this line I cannot overlook the exhibitors, and who can after having once served on that committee?

In the outer room will be found many things, both new and old, all of equal importance, each worthy your consideration; you will find the man whom you consider a bore during the work-a-day year an interesting, information imparting gentleman. Next to grasping the hand of my fellow dentist comes the contact with the exhibit representative; the exhibit and exhibitors have grown to be an important part of our convention.

I thank you for your kind indulgence, and submit this as my humble effort and ask for it as well as for the performance of the balance of my duties your greatest charity, for I assure you it is no easy task for me to hold up the high standard followed by my honored predecessors, and as I stand here looking into your faces, I seem to be looking up with a sincere desire for your approval, receiving which I shall feel proud to have filled the honored position in which you so kindly placed me.

One last word; while Divine Providence has permitted us once again to gather together with unbroken ranks, the loss to the profession outside of our immediate circle causes us extreme sorrow. Our thought of them renders Emerson's strong words peculiarly acceptable:

Life is too short to waste  
In cynic peep or critic bark,  
In quarrel or reprimand;  
'Twill soon be dark;  
Aye, mind well thine own aim,  
And God speed the mark.

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## Soldering Made Easy.

By H. W. NORTHROP, D.D.S., New York.

*Read before the New Jersey State Dental Society, July, 1901.*

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It is with pleasure that I am permitted to address you, but not without a certain amount of reluctance which I always feel when appearing before a learned body of gentlemen, such as are here today. When I realize that I am supposed to say something that will be of interest and education to each, or most of you, I am tempted to withdraw and secrete

myself in some remote corner and listen to the addresses of others. It is perfectly natural for most of us to wish for that accomplishment which nature has bestowed upon our neighbor and friend, and I always regret that I was not a born talker. Therefore, in choosing the subject which I have for my paper, I knew it to be one that I could handle freely and honestly, and if not of interest to all present, none could condemn my intent of purpose.

"Soldering Made Easy," if clearly presented, will, I trust, be a blessing and help to all here who have to worry over the trials of crown and bridge work in their practice. In the earlier days of dentistry soldering was one of the first and chief attainments of the mechanic, but after the arrival of vulcanite, soldering was less needed and by many not deemed a necessary part of their education, until later crownwork demanded more attention. The most interesting part of my earlier teachings was watching my preceptor blowing away with his long mouth blowpipe and alcohol lamp, soon seeing the small lumps of gold solder spread out so nicely upon the plate just where it was wanted. Many are using the same means at the present day, but the gas blowpipe is doing most of the work, except in suburban localities where gas is not yet introduced. The gasoline blowpipe outfit affords a splendid substitute in this case.

**Selection  
of Blowpipe.**

In the selection of a blowpipe, it would be useless for me to name any particular kind as the best, for many good ones are in the market, and you can use almost anything when thoroughly accustomed to the working of it, but bear in mind these few hints: see that there is perfect combustion of the gas, from the very finest blue point flame to the full blazing flame. Do not allow any flow of gas to burn at the point, that is not overcome by the force of air from the bellows. The movement of the regulating valve is also important; see that the mechanism is simple, easy and quick, doing its work with the least possible movement of the fingers. A blowpipe that is small, light and graceful in the hand is far preferable to some that are so heavy and thick at the point as to almost tire the arm in using it, and brings your hand so far away from your work. I would never advise any one to get one of those stationary affairs that sit on the table, expecting the work to move up to it and dance about while being soldered, for your work must lay quiet to avoid danger of dropping and breaking; and here is a good time to recommend you all to learn to handle the blowpipe with the left hand, leaving the right to handle solder, borax, etc. The blowpipe which has done all of my work for the past few years is only the tip of a once simple affair, and the valve action is just squeezing the rubber tubing which supplies the gas.

**The Bellows.** There is little to select in the matter of bellows, except that style which rests on the floor with the air-bag at the top, in preference to those that stand upon legs. It cannot tip over and the position is not quite so tiresome to the leg. The bellows is made in three sizes, small, medium and large. The medium is about the best for general work. I received a circular not long ago of a new invention in the bellows line, it being upon the plan of a bicycle pump. It looked practical and simple, but from experience I cannot say anything about it.

**Investing Materials.** Next in the line of our subject comes the investing and necessary materials. The three principal ones are pumice, marble dust and asbestos; sand also is sometimes used. Of course each is mixed with plaster, from one-third to one-half, as the case may require. Pumice I care very little for, as it does not make a strong investment and shrinks too much during the heating. I prefer and use mostly the marble dust; not the fine white dust, but of a coarse nature. It makes a firm, solid investment, one that does not shrink and very seldom cracks when mixed rightly. At the present time the supply which I am using seems to almost fuse or bake while heating, often making it difficult to break away from around the soldered work when cold. Asbestos also has many good qualities, and is considered one of the standbys for fire resisting power. There is nothing better for cases which require little trimming or cutting after hardening, like gold plates or very large cases of bridgework. The fiber of asbestos holds your investment very firmly together, and I would recommend its use in most large cases. The only particular advantage which marble dust has over it is in trimming and cutting away to expose the minute corners and points, where the solder is to run; the fiber of the asbestos, of course, will not cut, but is apt to draw out sometimes, exposing a point of porcelain or loosening some part of your work.

**Method of Investing.** When your work is set up ready for the investment, trim your model away, leaving just enough to hold your fittings and teeth waxed in place. Roughen the plaster and place it in water for a few moments, so it will get thoroughly wet, thereby preventing absorption of the water from the new mixture. Perhaps a word of explanation may be necessary to have the above fully understood; in all of my bridgework I make and adjust my attachments to the teeth before taking the impression. With the attachments in place in the impression, the model, to be made of two-thirds plaster to one of marble dust, is poured, and that part of the model carrying the attachments is invested with the teeth. But the investment should be about equal parts of plaster and marble dust for this

part of the operation. When well hardened, remove all wax by slowly pouring boiling water onto it, until every particle is washed away. Do not boil the mass in water, as is customary with vulcanite cases, as it weakens the plaster unnecessarily. After removal of the wax, which leaves exposed the metal, all surplus plaster needs cutting away so as to leave as much of the metal exposed to the flame of the blowpipe as is possible. Never attempt, or think you can solder successfully by forcing the flame down into a hole, for it is one of the most difficult things to do, and rarely brings the work out perfect; the more play and freedom your flame has, the better will be the results. Be careful to have all portions of your porcelain covered; also fill all crevices between the porcelains even with the surface of the backing. Wax will sometimes get between the porcelains while setting up, and if the crevices are allowed to remain after the wax is boiled out, borax getting in will often crack your teeth.

**Heating the Case.** When all these little points have been carefully attended to, put your case to heat up on any kind of a gas stove, burner or heater, being sure your flame does not strike your teeth or backing directly; it

must first heat up the investment, letting that in turn heat your porcelains and metal. There is no harm whatever in heating a case rapidly if the process is uniform. A wet investment causes less liability in checking teeth than a dry one. This idea is carried to the extent of putting an invested case which has been drying over night into water, to absorb as much moisture as it will, before putting over the fire to heat. Thus, the idea which formerly prevailed, that it was necessary to dry out a case before heating it up, is a useless waste of time.

If you have time to allow your case to thoroughly heat before commencing to solder, watch the gold exposed until red hot, then apply the blowpipe with a large generous flame all over the case for a good heating up of the surface which is to be covered with solder. If convenient, allow the case to remain on the heating stove while soldering, which will save work with the blowpipe, keep the case heated and also avoid checked teeth.

**Method of Soldering.** Have your solder cut into pieces of convenient size in an old tin box lid or equally hard substance, so that the hot pliers will not gather and conduct any refuse to bother you later. It is not necessary to

use wet borax, but if you desire to do so, put it on before the case is heated; do not add it in that form afterward. When thoroughly heated up, commence your work at one end; lay on a piece or two of solder, sprinkle on a pinch of powdered borax; and now, remember that at this stage begins the good or poorly soldered case. Be sure that your

first piece of solder flows before you put on a second; do not try to force it with a small flame, as this time a large flame will heat just as well, and not burn your gold; your metal must be hot enough to soften and flow your solder. Also, do not expect your first piece to complete the job; it will flow to the hottest point (which may not be where you expect it to lay); the second may do likewise; the third and fourth will form sufficient substance to unite all together and flow like water into every little crevice and corner. Then gradually put on piece after piece, with an occasional addition of borax. As you get sufficient solder at the starting point, gradually shift the position of your case, so as to work toward the other end; but always finish your soldering at one point before leaving it to move along. Thus keep moving gradually along the case until you finish your work at the opposite point from where you started. Never start at both ends and finish in the middle.

#### **The Teaser.**

If you wish to avoid pit holes in your solder when completed, be sure to keep your borax floating to the top of the melted metal, as the little pits are formed by particles of borax confined under each additional piece of solder; so while working have conveniently handy and use a small pointed instrument to stir up the solder and displace such particles of borax as would otherwise remain confined within the mass. A steel instrument is not the best for this purpose. I use an instrument of my own, which has been dubbed by my laboratory fraternity "Our Teaser." The point is platinum wire about gauge 17, two inches long, soldered to German silver wire about four inches long, with a handle on the end; the platinum point does not affect the solder like the steel. But to return to the solder, when you desire additional thickness at certain points and fear displacing what you have already done, put on small pieces, draw down the flame to the blue point, with just enough force of air to have perfect Bunsen flame but no noise, then use your "teaser" to spread and draw the solder to just the desired point, and you find the other has not moved a particle. You will also find the "teaser" useful in coaxing solder to such points or surfaces to which it would not otherwise flow, because the heat would keep it near the center of the larger mass of metal.

Now, after all this explanation, please keep this fresh in your mind. If you want solder to flow, have the metal of your case *hot* enough to cause it to soften and spread from contact with the heated surface. If your solder does not flow, but balls up, don't blame it, as your case is cold. Never try to push your solder into a hole; you can coax it, but never push it. Heat and borax will do all your work for you.



**Burned  
Backings.**

A word or two about burning bands and backings; it wastes a great deal of time and patience and is not necessary. It is generally done with the small sharp flame which you are using to do the work a large flame should do. Also, when the solder is once flowed to a band leave it there; if not satisfactory, use another piece, even if it has to be ground off later. Solder once flowed will not move as easily the second time, and if attempted is liable to take part of your band with it. If you desire to move a surplus of solder to another position, with no danger of burning bands, keep the hot point a little in advance of the metal, and you will see the metal follow right along after it.

**Coolings.**

After the soldering is completed, a uniform cooling is as essential in prevention of checked porcelains as was the heating up. The best and safest way yet known is to bury immediately in a can of marble dust or plaster, leaving it there to cool. It is claimed by some that rapid cooling can be done by wrapping the case in a piece of cloth and gently dipping in boiling water. I have done this, in experiment, successfully, but never had the courage to utilize the plan on a large case when the patient was waiting and in a hurry. The marble dust is safe and far better than cooling with exposure to the air.

When cool carefully break away the surrounding investment and look for checks. If you see any checks or any facings drop off, you will be sorry you ever opened it, and will say, "Northrop was just talking when he said he never checked teeth." But, if everything has come out satisfactorily, you will smile and think dentistry is rather enjoyable after all.

The case is then placed in a jar of muriatic acid, remaining there until brightened and ready for finishing and polishing, about which I could fill as many more pages, but will refrain from burdening you further this time.

The courteous manner in which you have listened fully repays me for the efforts upon my part in giving you this paper, and if I have dropped even one good point to help some of you out of a "warm difficulty," I am glad, you will be glad, and your patients will be glad, for your disposition will be sweeter, your temper will be cooler and your pockets, I hope, will be fuller.



## **New Jersey State Dental Society.**

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### **Thirty-First Annual Meeting, Wednesday, July 17, 1901—Morning Session.**

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President Riley called the meeting to order.

The Secretary called the roll. President Riley surrendered the chair to Vice-President Fish, and then read the annual address.

A discussion upon the President's address ensued, which was participated in by Drs. Stockton, Osmun, Meeker, Sutphen, Hindel, Chase, J. I. Hart (of New York), Adams and Gregory.

On motion the President's address was placed on file.

President Riley then resumed the chair.

The following propositions of membership were received and on motion took the usual course: A. R. White, Freehold, N. J., sponsors, Drs. Truex and Riley; David C. Baker, Orange, N. J., sponsors, Drs. Meeker and Stockton; L. E. Estler, Arlington, N. J., sponsors, Drs. Riley and Meeker; H. C. Scobey, Long Branch, N. J., sponsors, Drs. Van Dorn and Meeker; W. D. Knecht, Atlantic Highlands, N. J., sponsors, Drs. Van Dorn and Meeker.

The Secretary reported the receipt of a communication from the National Association, asking for the appointment of delegates to the Milwaukee meeting.

The President announced that if any members who desired to attend the meeting of the National Association would give their names to the Secretary, the appointment of delegates would be made therefrom.

The resignations of Drs. Howe and E. O. Peck were received, and on motion accepted.

On motion of Dr. Gregory, Dr. E. O. Peck was elected a corresponding member.

On motion adjourned until 8.30 p. m.

**Evening Session.**

President Riley called the meeting to order.

The Secretary called the roll.

The following application for membership was received, and on motion took the usual course: Frank L. Manning, South Orange, N. J., sponsors, Drs. Adams and Hindel.

The Membership Committee reported favorably on the following applications: Drs. White, Baker, Estler, Scobey, and Knecht.

On motion the election of members was laid over until Friday morning.

Dr. H. W. Northrop, of New York, then read a paper entitled "Soldering Made Easy."

**Discussion of Dr. Northrop's Paper.**

I want to thank Dr. Northrop and to say that if it is possible to make soldering easy, he certainly has done so in his interesting and concise paper. If anybody could either read or listen to that paper and not know how to solder, it is only because he has no business before our New Jersey Board.

**Dr. B. F. Luckey,  
Paterson, N. J.**

Soldering, as Dr. Northrop has said, is simply and practically the process of properly heating the case and following it up with the flame, and the most difficult point to every practical man who has had experience in the laboratory is that of flowing it evenly and properly, filling in all the deep places, and to me, for years, it has been a matter of satisfaction to leap over the little deep pits, to first fill them in with a piece of gold and then to solder it and not trust to one's own ability to keep the case perfectly and evenly heated, and yet be short of the melting point. I have seen more than one case disappear in the shape of an ingot or a few little pellets scattered around because somebody has failed to watch it closely, and doubtless there are many others in this room who have had the same experience, when by filling in the deep and uneven places we find it very easy to solder smoothly without all that great care, and some of us are so burdened with the cares of state, as well as the care of our patients, that we cannot watch all those little points.

I believe that the dentist of today has a much easier life in the matter of these details than he had some few years ago, because the means of accomplishing the result have been improved to such an extent. For instance, in this very matter of soldering plates. When I commenced the practice of dentistry there was no such thing as the foot bellows; the nearest thing to it that I remember in my old preceptor's laboratory was

a big zinc tank, with an air chamber on one side and a water chamber on the other, and as we pumped air into one side it would force the water into the other, and thus, by the mere pressure of the water, the air would be forced through a rubber tube and so through an ordinary mouth blow-pipe, which was a very good scheme as compared with the use of the ordinary mouth blowpipe. We did that very many times and we lost some cases and cracked some porcelain which probably would not be cracked with the Lee and other up-to-date blowpipes which we have today.

I envy the young men who come into the practice of dentistry at this time, the ease and comfort with which they can accomplish good results, and the prices they can get for the work, compared with what the old fellows received.

I am very glad, indeed, to hear my good friend, **Dr. C. S. Stockton, Newark, N. J.** Dr. Luckey, of Paterson, discuss this paper. I was talking with him tonight about what was to be done here this evening, and he said the paper was a very good one, and he supposed it would bring out a discussion by the old timers. I never before placed the Doctor in that category, but I am glad that he has placed himself there tonight and given us such a good talk on soldering.

One point I want to bring out that is not exactly touched in the paper. Some of you, if you do not make whole sets of teeth, as some of us old timers used to, you do solder crowns and sometimes you want to fill in and make the cusps heavier. Undoubtedly you have had a great many failures by the coronal surface giving away. What caused that? Very largely because you have heated the gold before you heated the solder. If you do that to any great extent the solder will eat through your gold. In making whole sets of teeth the author of the paper advises putting only a piece or two of solder at a time. On the contrary, I advise you to put on about all the solder that you expect to use. That is very different from the paper, but by mixing your borax about the consistency of cream and painting over all the surface that is to be united, and then dipping your pieces of solder into the borax you can lay on all the pieces and they will stay there, and then, when you have heated the piece up, if you want to make soldering easy, not by putting on a piece at a time and allowing your teeth to cool more or less in the meantime, but by the proper manipulation of your flame, the whole business is done almost instantly. Of course, it is important if you do put it on piece by piece to go around from one side to another; not so much from the danger of cracking your teeth, as damaging your plate. You have often wondered, in all your care in making your model, in getting up your dies and

counter dies and striking your plate and having it to fit exactly, to find it did not fit at all; that is the danger.

I rose more especially, not to discuss the paper, but to call out my friend, who, with myself, is the only charter member of this society here. We are proud that we are here, proud to be living among you, and I am very glad to see him here tonight, the first time he has been with us for some years, and I take great pleasure, Mr. President, in asking you to call upon our friend Dr. Edwin Chew, of Salem, N. J., who knows everything about soldering, whether hard or easy.

As Dr. Stockton says, in soldering plate work, I

**Dr. Edwin Chew,** think it is better to put on all the solder you think  
**Salem, N. J.** necessary at once, have the case well heated all over,  
so that the solder will flow equally pretty nearly all

at the same time.

Another thing, to prevent the plate from springing the joints must fit and the back come down tightly; if you can't get it tight, take pieces and put underneath and in between with a band of iron around the outside, with little staples across that band, and I'll warrant you it will succeed.

There is very little that I wish to add to what

**Dr. Northrop.** has been said, excepting to thank the two gentlemen for bringing out the point in reference to the comparison in soldering plates and bridges. I have had more experience in soldering bridges than plates, and the paper was drawn from my experience in that connection, but the two methods of operating, in soldering both plates and bridges, are distinctly different. In the one case the more soldering you get of one kind, and the quicker it flows under one heating on the plate, the better it is; but with bridge work you cannot put the full quantity on. I thank the gentlemen for bringing that point out, for now no one can go away thinking that I have misrepresented it.

In reference to soldering or repairs in bridge work, there is one thing I will mention, which may prevent the checking of the teeth. You will have more trouble in putting a repair case through and not checking than with new teeth. This arises from the method of heating. There is temptation when you put one tooth on a plate or bridge to confine your heat to that one tooth for fear of damaging something else; but that is an error. The more the plate is heated the less trouble you will have and the better your case will come out.

## The Missouri Meeting.

Reported by R. C. BROPHY, M.D., D.D.S., Chicago.

The thirty-seventh annual meeting of the Missouri State Dental Association was held at Sedalia, July 9, 10, 11 and 12, 1901, and should go upon record as one of the most successful State meetings of the year. The attendance was large, including a considerable contingent from without the State, and under the dictatorship, quite up to the standard established by "Czar" Reid, of the Illinois Association, of President Fletcher, aided by the Corresponding Secretary, Burton L. Thorpe, of St. Louis, upon whose young head and broad shoulders rests the honor and responsibility of presiding over the destinies of the association as President Fletcher's successor, and by the irrepressible Dental Demosthenes, Conrad, of St. Louis. The meeting was characterized by interest and enthusiasm all the way through, and this, despite the fact that extreme atmospheric torridity prevailed all during the convention, the thermometer ranging from 97 to 109 degrees during the entire period.

The programme was an extensive one, and much work was done, as the following synopsis will show.

Promptly on time President Fletcher relinquished his chair to Vice-President Carter, of Sedalia, and delivered his address. Complimenting the association upon its past achievements, felicitating it upon its present successful condition, and earnestly enjoining it to push forward in its excellent work, the address was a highly creditable one. A recommendation which struck a responsive cord in the minds of the sweltering auditors was that arrangements be made for changing the date of meeting of the association to a cooler period of the year. This recommendation was acted upon, and the month of May was selected for future conventions.

The matter of the coming World's Fair to be held in St. Louis was touched upon by the President, with a recommendation that a Committee on Reception and Entertainment be appointed, and that this committee be commissioned to arrange for a dental headquarters of the nature of a club house. This recommendation was also acted upon and a committee appointed, which, without doubt, will make the dentists visiting the to be "greatest show on earth" more appreciative of the fact that they were born than they will have ever felt. Dr. M. C. Marshall, St. Louis, Mo., read a paper entitled, "Some Clinical Experiences in Pyorrhea."

**Pyorrhea Alveolaris.** A brief paper giving some experiences in practice in the treatment of pyorrhea alveolaris, and differing from many papers read nowadays, and many claims made, in that it did not proclaim acquirement of ability on the part of the essayist to cure this disease easily, quickly and positively in all cases. No effort was made to induce an underestimation of the gravity of the condition and the difficulties of effecting permanent cure.

The cases cited by the essayist were all of advanced stages of the disease, and the import of the paper was calling attention to the fact that in such cases the essayist had been most successful in effecting cures by devitalizing the teeth.

**Immediate and Bloodless Pulp Removal.** Dr. W. L. Reed, of Mexico, Mo., read a paper entitled "The Immediate and Bloodless Removal of Pulp." This essay was devoted to a discussion of the merits of cocaine pressure anæsthesia in painless and bloodless extirpation of pulps, and advocating the following procedure: If the pulp is not completely exposed, after first thoroughly syringing the cavity with tepid water, a crystal of cocaine saturated with glycerine is placed over the chamber, and with a rubber plug pressed for a necessary period of time. If the pulp be exposed, a saturated solution of cocaine and glycerine is used.

Discussion of this paper was participated in by Drs. Goodrich, of Chillicothe; Patterson, of Kansas City, and Magraw, of Fayette, the latter advocating the use of suprarenal extract in the place of glycerine.

**Sensitive Teeth Excavated Painlessly.** Dr. Austin C. Hewett, Chicago, read a paper entitled "Proof of the Value of Analgesics and Anæsthetics in the Dental Office." The essayist's *modus operandi* of prevention of pain, briefly noted, consists in homeopathic inhalation of chloroform. It is claimed by the essayist, and the claim was borne out by a number of practitioners present, who, at his suggestion, had tried it, that a state of anæsthesia of sufficient potency to obtund sensitiveness to minor operations may readily be maintained by occasionally inhaling chloroform. The essayist's practice is to place a two-ounce bottle of the liquid in the patients' hands and let them administer to themselves as required to obtund pain; or to allow an assistant to stand by the chair and act as administrator of the anæsthetic.

**Vacuum Chambers.**

Dr. W. V. B. Ames, Chicago, read a paper entitled "The Utilization of Atmospheric Pressure, With and Without Air Chambers." The writing of this paper, as declared by the writer, was suggested

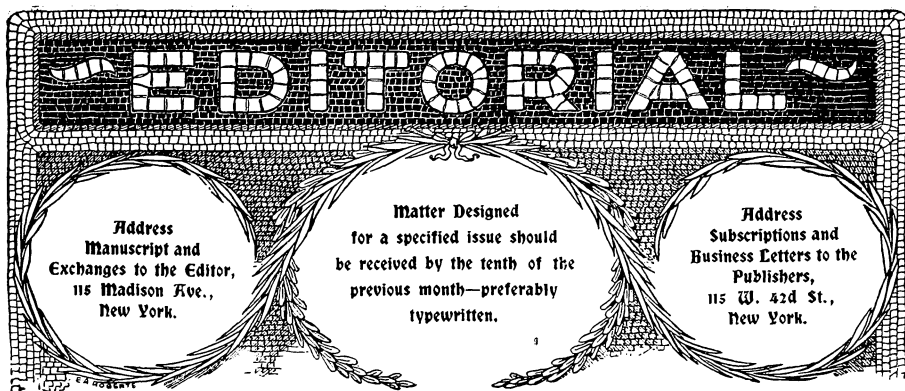
by the symposium upon the air chambers published recently in *ITEMS OF INTEREST*, in which there seemed to be expressed a preponderance of opinion that the vacuum chamber was a necessity. The essayist holds a different view, and argued that further than to act as a relief for the hard ridge along the dome of the palate, it is useless. If contact of the plate with the tissues is perfect, "suction" will be just as good without an air chamber as with one.

**Suprarenal  
Capsule.**

Dr. J. Robert Magraw, Fayette, Mo., read a paper entitled "Extract of Suprarenal Capsule." The dental uses of this extract were defined in this essay, and briefly are as follows. In conjunction with powdered crystals of hydrachlorate of cocaine as an anæsthetic. As a styptic and astringent. In obtunding tissues in pyorrhea treatment, setting crowns, and adjusting cervical clamps. In reducing hemorrhage it acts very speedily and effectively. In excising fungoid growths it makes the operation painless and bloodless. It is peculiarly aseptic and never produces ill after-effects.

The following papers were also read: "Dentistry as a Fine Art," by Dr. J. W. Hull, Kansas City, Mo., an appeal for higher artistic and professional standards; "How to Generate Pure Nitrous Oxide Gas and Administer the Same," by Dr. L. W. Nevius, Chicago, Ill.; "Surgical Treatment of Cleft Palate," by Dr. Truman W. Brophy, Chicago, Ill., a lecture delivered in the absence of the author by his assistant, Dr. F. B. Moorehead; "Orthodontia," by Dr. C. D. Lukens, St. Louis, who argued that extraction is rarely necessary; "Just a Young Dentist," by Dr. T. W. Arnold, Butler, Va., a paper dealing with highly idealistic advice to young men; "Diagnosis," by Dr. F. G. Worthly, Kansas City, a plea for close observation of details; "Oral Hygiene," by Dr. George H. Gibson, St. Louis, Mo., in which it was suggested that dentists should decline to work in unclean mouths; "Detrimental Effects of Soluble Organic Substances in Dental Cements," by Dr. A. Tschirner, St. Louis, Mo.; "Our State Law," by Dr. Walter M. Bartlett, St. Louis, Mo.; "Painless Separation of Teeth," by Dr. Burton L. Thorpe, St. Louis, condemning mechanical separators and recommending gutta percha; "Porcelain Work," by Dr. Samuel S. Bassett, St. Louis, Mo.; "Diagnosis From a Microscopical Standpoint," by Dr. M. D. Hamisfar, Warrensburg, Mo.; "Abuse of Amalgam," by Dr. H. H. Sullivan, Kansas City, Mo.





## Nomenclature.

In the August number of the *Dental Brief* appears an editorial under the caption, "The Genesis of Approximate and Some Allied Adjectives," which is commended to the attention of all students of our terminology, and especially to the Committee of Nomenclature of the National Dental Association, a committee which might well imitate the zeal of Dr. Litch in investigating the etymology of some of our terms.

**Proximal  
or  
Approximal.**

Dr. Litch, in the editorial under discussion, has searched the literature, tracing the etymology of "approximate" as far back as 1473, and thence through the lexicons and phrase books to the present era, apparently skipping no authority of any standing.

He seems to have discovered the actual first use of the word in a book entitled "*Pseudodoxia-Epidemica*," by Sir Thomas Browne, where it is of interest to note that it occurred in the phrase, " \* \* \* containing approximate dispositions unto animation." Thus the word seems to have been coined to express the very idea in connection with which it is ordinarily employed down to this day, being descriptive of "nearness" in anything but a physical sense. Thus we hear of "approximate cost," "approximate distances," "approximate time," "approximate theories, thoughts, ideas, etc.," but much less frequently and less correctly of "approximate houses" and "approximate surfaces of teeth."

The argument against proximate is similar, and Dr. Litch discards

both, leaving the choice between "approximal" and "proximal," his own preference being for the latter.

He admits that modern medical dictionaries give the word "proximal" as the antithesis to distal, but claims that the word is thus but little used by physicians, who have but infrequent need of the term. Yet it appears from his own researches that it was so intended by its author, John Barclay, who says of it:

"Proximal and distal are proposed in preference to proximate and distant, etc."

Admitting, even, that proximal is seldom used in its true sense by physicians, why should dentists give to it an entirely different meaning, when the word "approximal" will serve just as well, and is seemingly already approved by the majority of dental writers, since the time when the editor of the *Dental Cosmos*, Dr. White, years ago gave it his editorial preference, making it the rule in his magazine?

This brings up the thought, that should the National Association, through its Committee on Nomenclature, much longer fail to straighten out some of the tangles, it might be advisable for the editors of the leading magazines to have a conference, study out and discuss the doubtful words, and make a final choice, which thereafter should be rigidly enforced in the current literature regardless of the preferences of individual authors. By such a plan, especially when it is remembered that editors in recent years have had conspicuous connection with many of the authoritative text-books, it would be inevitable that our terminology would in time achieve stability.





## **Oral Pathology and Practice.**

### **A Text-Book for the Use of Students in Dental Colleges and a Hand Book for Dental Practitioners.**

By W. C. BARRETT, M.D., D.D.S., M.D.S., LL.D.

Second Edition, Revised and Enlarged.  
S. S. WHITE DENTAL MANUFACTURING CO.  
Philadelphia, 1901.

The first edition of this work having been exhausted within two years of its first appearance, the author has presented a second, in which every chapter has been thoroughly revised, the present volume also being well illustrated, a feature which had not been thought advisable in the previous edition.

The author indorses and adopts Miller's theories as to the germ origin of dental caries, from which postulate he logically advises antiseptic medicinal agencies as tending to abort, even though they may not entirely prevent caries. In this connection he says:

"Listerine, borine, borolyptol, and other combinations are proprietary preparations, and therefore objectionable on ethical grounds, for no physician has a right to make a prescription for a patient unless he is fully aware of its entire character and thoroughly conversant with every drug in it."

In view of the present condition of affairs in relation to drugs and their administration, the above seems rather a narrow statement. Time was when so-called proprietary remedies were secret preparations in the fullest sense of the term, and sold by their vendors with money making as the sole aim. In these days our leading pharmacists, in a sense, work in co-operation with the physicians, and offer drugs, or combinations of drugs, only after thorough practical tests by medical men, the components of combinations being fully printed on their labels. Today leading physicians are recommending many such remedies because of their convenience in administration, because experience has shown the course to be safe, and because they know that the pharmacists are trustworthy. Why should we trust to the purity of a single drug, the name of which is well known, while the manufacturer may be quite unknown, and reject the product of a widely known pharmacist, whose sealed and labeled package is a guarantee of the contents of the phial? For example, glycerol, and rose water, of each two ounces, ten drops of the mixture to Dr. Barrett recommends as an antiseptic mouth wash, carbolic acid crystals.

be used in a wineglass of water. Simple as is the formula, what guarantee is there that the druggist nearest to the patient would properly compound it? Is it certain that carbolic crystals would be used? And would all druggists comprehend the term glycerol? If we cannot use the mouth washes enumerated, shall we longer employ pyrozone, a well tried but nevertheless proprietary remedy, especially when it is known that druggists often supply peroxide of hydrogen when pyrozone is prescribed? Instead of insisting upon the full letter of the code in relation to mouth washes, thus forcing our patients to have their own preparations compounded at "any old drug store," at increased cost, would it not be better for an authoritative committee of dentists to thoroughly test the proprietary washes on the market and inform the general practitioners which are safe and efficacious?

The following is the author's statement as to the blood supply of teeth, and is quoted intact as being a well constructed sentence, which adequately expresses the views of the best authorities:

"The foraminal opening of the normal tooth root is not a single direct aperture, having its axis in line with that of the pulp, but, especially in early life, is a delta, with a number of communicating orifices, which begin to diverge near the apical junction of the dentine and cementum, and with a circular sweep reach the pericemental membrane, with whose blood vessels the branches from the dental pulp anastomose."

So far as is known to the reviewer, Professor Barrett was the first to advance the view that the dental pulp is not nourished by a single vessel entering at the apex, and his opinion has been sustained by the investigations of some of our best microscopists. The blood supply of the pulp and investing membrane of the human tooth is of tremendous importance when discussing pulp removal as a remedial procedure in treatment of pyorrhœa and allied diseases.

In the chapter dealing with alveolar abscess the author has introduced a description of pericemental abscess following the theories and using the illustrations of Kirk.

The succeeding chapters seem to have been carefully revised, in accordance with the claims of the author in his preface, and the illustrations being very fine and in many instances new, much enhance the value of the work.

In regard to the retention of implanted teeth, the author still leans toward the theory of a new pericementum, his argument, however, not being quite convincing. He says: "It is as true that pericementum may be secondarily formed after its destruction as that any other tissue may be grown after its *partial* loss" (*italics ours*). The word "*partial*" here is an important word. Supposing that a tooth from which the pericementum has been entirely removed should be implanted into a newly drilled socket, neither the root nor the socket having any pericementum nor periosteum, whence will be derived the new pericementum which theoretically is needed to retain the tooth? Crabs grow new claws, and birds grow new feathers, while other animals renew lost parts, but that man may replace any part, even a single hair of the head, after total destruction, is yet to be shown.

The second edition is a marked advance upon the first, and should meet with even more favor.

R. O.

## Dental Electricity.

By LEVITT E. CUSTER, B.S., D.D.S.

With over Two Hundred Illustrations.

U. B. PUBLISHING HOUSE, Dayton, Ohio, 1901.

The author, in his preface, which he mistakenly says will not be read, explains that in writing his book he had in mind the busy life of a dentist, and has therefore aimed to present his subject in a concise and tangible manner. He states that many personal experiments were performed, in some instances to verify the statements of others and to adapt some appliance to dental uses.

In separate chapters he clearly explains "The Nature of Electricity," "Electrical Terms," and "Magnetism." The fourth chapter, devoted to the "Sources of Electricity," covers 125 pages, the subjects being exhaustively yet concisely treated, the text being amplified by excellent wood cuts. Succeeding chapters with equal clearness describe "The Rheostat," "Power," "Heat," and "Light." The chapter on "Power" is especially commended to the careful study of all who have introduced electricity into their offices for the running of lathes, engines, etc. The electric motor is so very valuable as a labor saving appliance, that too many dentists have purchased and installed outfits, with little if any knowledge of their working. There is little wonder, then, that many have suffered the aggravation, in times of greatest need, of finding their motors motionless when turning the switch. A careful reading of this and other chapters should make any intelligent man capable of discovering the causes of stoppage, often very slight and easily overcome.

The chapter on "Electrolysis" fully explains the rationale of electrical medication, as well as methods of electroplating.

In the chapter on "Cataphoresis" a brief history of the introduction of the method into dentistry is at once followed by a discussion of the probable causes of the phenomenon. Electrical osmosis is explained and discussed in connection with the theories of some writers that cataphoresis is a true electrolytic action. The author believes that both processes are in operation during cataphoric application of medicaments. He says:

" \* \* \* until it is clearly demonstrated that the electro-negative ion of the cocaine solution is capable of producing the anæsthetic effect which is characteristic of the undivided cocaine solution, we may maintain the belief that the anæsthetic effect, after all, is due to electrical osmosis or cataphoresis, as it has been termed."

The balance of the chapter continues an exposition of "cataphoresis," methods, appliances, and possible dangers being amply and intelligently described. Indeed, this chapter brings the literature of the cataphoresis up to date, and is an able contribution.

The chapter on the X-ray is adequate in its descriptions of appliances and methods, but the illustrations used as reproductions of skiagraphs are not particularly good; indeed, they are far inferior to the pictures of Dr. Price recently presented to the profession in the pages of this magazine.

The book as a whole is a timely and meritorious contribution to our literature, and should prove of value as a text-book in the colleges. The author is to be congratulated upon the result of his work, and complimented upon the clearness and conciseness of his style. The publishers have made a very presentable volume, both text and illustrations being well printed, and on good paper.

R. O.

### **Poems of the Farm, and Other Poems.**

By CHARLES NELSON JOHNSON.

Chicago: DANIELS COMPANY PRESS, 1901.

This little volume is from the versatile pen of the well-known dental writer, Professor C. N. Johnson, of Chicago. In a modest preface the author informs his readers that the poems "are not presented to the public with the slightest pretension to merit." Indeed, he says that they are not presented to the public at all, but, having been placed between covers in response to the requests of friends, are intended only for friendly eyes.

The author need have little fear; no excuse is needed for giving his poems to an enlarged circle, since there is quite sufficient of actual merit in his lines to make friends of his readers, so that none but friendly voices will be heard in comment. The verses, while entirely original, remind one of Will Carlton and James Whitcomb Riley. There is a homeliness to them which is convincing, satisfying the reader of the truth and genuineness of all the pictures. Those in which local idioms of speech occur show that the author has sufficient intimacy with the dialect which issues from the mouths of his characters to portray them with lifelikeness. Reading between the lines one cannot escape the conviction that the author is especially fond of children. The profession is to be congratulated upon having among them a real poet.

R. O.

### **The City and the Forest by the Sea.**

#### **A Poem.**

By ALLISON R. LAWSHE.

RAIN DROP PRESS, Trenton, N. J., 1901.

This is quite a pretentious poem of twelve stanzas of nine lines each, beautifully printed in pamphlet form, one stanza occupying each page. There is a very attractive frontispiece, a sun setting over the waters, a reproduction of a water color sketch by the author of the verses, Dr. Allison R. Lawshe.

The poem is a dreamy rhapsodical description of heaven and hell, the author suggesting that either may be the product of one's earth life, reward or condemnation being meted out by one's self. The versification is perfect metrically, and admirable from the standpoint of true poetry, the general method both in intent and accomplishment reminding one of Edgar Allan Poe.

R. O.



## **Dr. M. Louis Rhein.**

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During the intense heat of July Dr. M. Louis Rhein, at the time living in New York City, suffered an attack of prostration, which developed into pneumonia, from which he died on the 19th, after a very brief illness.

Dr. Rhein was born at Schwetzingen, Germany, June 2d, 1828. He was educated at Heidelberg, obtaining the theoretical knowledge of his profession at the university, and acquiring manual training by apprenticeship with a jeweler. As a result of his early schooling, when in full practice of dentistry, he manifested remarkable ability in all classes of prosthetic work, which was the more noticeable because the era of artistic achievement in prosthodontia had not yet arrived. He was one of those who carved their own porcelain teeth, becoming so proficient in this art that he was offered an interest in that branch of the business by one of the most prominent manufacturers of teeth. He began the making of continuous gum sets at the same time as Dr. John Allen, and must be reckoned as one of the pioneers in that field.

In Germany Dr. Rhein was a member of a corps of sharpshooters which was prominent in the rebellion of '48, an outbreak originating among the students. After the suppression of this short revolution, the Doctor left his native country and came to America, where he first practiced in St. Louis. On a trip to New York, on one occasion, he stopped at Albany, which city so pleased him that he removed thither, making it his permanent home, and it is in Albany that he will be best remembered as a dentist.

He had the most rigid notions in regard to ethics, always insisting upon the strictest observance of the mandates of the code. In regard to fees he held somewhat unique views. He classed his services as art work, exacted high fees and would make no reduction, giving his work outright as charity, or else demanding full fees. Because of his prosthetic skill he made appliances needed by the surgeons in Albany. He believed that a full medical education better fitted a man for the practice of dentistry, and therefore when his son, Dr. M. L. Rhein, elected to study dentistry,

he was first made to graduate as an M.D., after which he was sent to a dental school.

He was a man noteworthy for the beautiful simplicity of his character. Politically he was essentially democratic in the purest meaning of the term. He granted equal rights, socially and otherwise, to all but those who by their own acts proved themselves unworthy. Of an affectionate, demonstrative nature, his love for children was peculiarly noticeable. Having retired from active practice several years ago, he has since then lived in New York City, and was a well known character in Central Park, where he loved to stroll in pleasant weather, and where he was known and beloved by hundreds of children for whom he always had sweetmeats in his pockets.

He leaves a wife aged 72 and three sons. The oldest, Dr. B. L. Rhein, is practicing dentistry in London; the second, Dr. M. L. Rhein, is the well-known New York dentist, while the youngest son at present holds the civil position of Secretary of Pasig, Philippine Islands. R. O.



### **National Society Meetings.**

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District of Columbia Dental Society, Washington, December.  
Ohio State Dental Society, Columbus, December 3, 4, 5.

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### **First District Dental Society of Illinois.**

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The twentieth annual meeting of the First District Dental Society of Illinois will be held in Monmouth, October 1st and 2d, 1901. Members are requested to note change of date from September 24th and 25th. All dentists residing in the district are urged to be present. Visiting dentists from this and adjoining States will be welcome. An interesting programme is in course of preparation.

F. J. KYLER, Secretary.

Kirkwood, Ill.